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Bilateral Trust as a Determinant of Loan Maturity:

Evidence from European Cross-Border Syndicated Lending

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Abstract

This paper studies the effect of bilateral trust between countries and its impact on the maturity of cross-border syndicated loans within the European Union. Drawing on a panel dataset of approximately 210,000 syndicated loans from 2002 to 2022, we combine Eurobarometer survey data on bilateral trust with loan-level information from Refinitiv LPC's DealScan. Employing fixed-effects panel regressions, we find that higher bilateral trust between lenders and borrowers' countries significantly predicts longer loan maturities. The results hold after controlling for loan purpose, macroeconomic and relational factors, and governance quality, underscoring the robustness of what we term the "bilateral trust effect". Additionally, we explore heterogeneous effects through interaction regressions, showing that trust matters exclusively for long-term loans. Its importance increases for more complex transactions, smaller borrowers, and during global crises. Our results confirm that lenders are biased by their perceptions of the borrower country's trustworthiness when determining syndicated loan maturities during term sheet negotiations.

We acknowledge that we used ChatGPT: Model 4o to help rewrite and improve the syntax of certain sections of this report. Access available at: https://chatgpt.com/?model=gpt-4o

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1 Introduction

Despite decades of financial integration and the adoption of a common currency for most EU member states, cross-border lending in Europe remains constrained by frictions. Among them, the level of trust between a lender towards a borrower's country – termed bilateral trust – imposes an implicit barrier to cross-border lending and inevitably shapes fundamental aspects of financial contracting. One of the most revealing and understudied consequences of bilateral trust levels is its impact on loan maturity, which refers to the length of time for which funds are committed to or loaned to a borrower by one or more financial institutions. While the debt tenor generally reflects borrower risk and market conditions (Diamond, 1991), the depth of familiarity and confidence in the other counterparty remains pertinent and leaves room for bias. Using trust data gathered from Eurobarometer surveys, we explore this relationship between bilateral trust and its impact on the tenors of cross-border syndicated loans. In doing so, we highlight how informal relational factors continue to mediate financial integration, even in a region with a semi-uniform policy framework. Compared to the United States – where capital flows more freely across state lines under a common legal and cultural infrastructure – the EU still exhibits sensitivity to national boundaries in lending relationships. Understanding how these frictions shape contractual outcomes is, therefore, not only academically pertinent but has implications for firms' financing capacity, macroeconomic resilience, and the broader trajectory of European competitiveness.

The loan maturity literature has long recognised the critical role played by information asymmetry and borrower risk. The pre-eminent contributors to the literature, Flannery (1986) and Diamond (1991), emphasise that debt maturity is used as a mechanism by lenders to facilitate monitoring, the prevention of moral hazard and to facilitate liquidity management for borrowers. Empirical studies broadly confirm their theoretical research. For instance, Berger et al. (2005) demonstrate that small business credit scoring mitigates information asymmetry, leading to longer debt maturities. However, more generally, the literature neglects the critical role played by lenders' preconceptions and biases when evaluating borrower risk. The literature on trust, pioneered by Guiso, Sapienza, and Zingales (2008) demonstrate that trust reduces perceived risk and facilitates financial transactions. Its influence on debt maturity decisions, however, has not been studied. Moreover, the syndicated lending literature has examined pricing, syndicate formation, and lead arranger behaviour, but, has largely overlooked the contractual dimension of trust and its role in shaping cross-border loan maturity.

By directly studying the confluence of these three literatures, we aim to bridge this gap. **Specifically, we ask: does bilateral trust - capturing the perceived trustworthiness of borrowers' countries by lenders - affect the contractual tenor of syndicated loans in Europe?** Our analysis draws on a panel dataset that combines Eurobarometer survey data on bilateral trust with syndicated loan information from Refinitiv LPC's DealScan. The data spans 21 years (2002–2022) and features approximately 210,000 loan contracts involving borrowers and lenders from 13 EU countries and the UK. To assess how bilateral trust influences loan maturity, we estimate fixed-effects panel regressions that control for unobservable borrower-country characteristics and further models to assess the heterogeneity of the "bilateral trust effect". The specifications include controls

for loan-level characteristics (such as purpose), macroeconomic factors (GDP growth, inflation, yield curve steepness), and institutional indicators (World Governance Indicators) to ensure robust estimation. **Our results find that lenders systematically lend at longer maturities to countries they perceive as more trustworthy.**

This research makes three key contributions to the literature. First, it expands the literature on debt maturity by highlighting bilateral trust as a key determinant of syndicated loan maturity, advancing further than traditional firm- and loan-level explanations. Second, it broadens the trust literature by highlighting the influence of bilateral trust on the structure of financial contracts, not just on broader economic outcomes. Third, it leverages syndicated loans as a unique arena with multiple dynamics influencing how bilateral trust shapes loan maturity.

The various sections of the paper proceed as follows. Section 2 reviews the existing literature on debt maturity, trust in economic decision making, and syndicated lending. Section 3, introduces our hypotheses. Section 4 details the dataset and the construction of regressors and controls. Section 5 outlines the empirical methodology that is followed throughout. Section 6 presents and discusses the results of our specifications. Section 7 concludes.

2 Literature Review

While a considerable body of research has explored the determinants of debt maturity, the role of trust between countries in financial contracting remains largely understudied despite its importance in shaping economic exchanges. Similarly, as syndicated lending becomes an increasingly dominant method of cross-border financing in Europe, few studies have examined how borrower-lender trust affects the terms or provisions of these loans. This literature review demonstrates that their confluence remains underexplored through identifying and analysing the key areas of research on debt maturity, trust in financial contracting, and syndicated lending. This provides the conceptual foundation for our empirical study, where we contribute novel evidence on how trust shapes loan maturity in cross-border syndicated loans across the EU.

2.1 Debt Maturity: Dominance of Risk and Firm Quality

Existing literature on debt maturity primarily focuses on credit risk and informational asymmetries between borrowers and lenders when determining the structure of loan contracts. Diamond (1991) uses theory to model debt maturity choice as a function of borrower's private information about their future credit rating. Diamond (1991) demonstrates that low-quality borrowers may be limited to short-term borrowing due to agency problems. In this setting, short-term debt functions as a monitoring tool, enabling lenders to reduce the risk of moral hazard and opportunistic behaviour. High-quality borrowers also borrow short-term, anticipating the option to refinance at better terms, while medium-quality borrowers choose medium to long-term debt to minimise liquidity risk.

In contrast, Flannery (1986) provides an alternative view by emphasising signalling under asymmetric

information, with firms voluntarily choosing shorter maturities to convey their credit quality to the market. Under Flannery's 1986 model, once transaction costs are considered, lower-quality borrowers prefer longer maturities to lock in terms, whereas higher-quality borrowers choose short-term borrowing, anticipating favourable refinancing opportunities. Although Flannery (1986) and Diamond (1991) reach opposing conclusions, they agree on the key role played by information asymmetry in determining maturity structure.

Information asymmetry is central to the theoretical literature on debt maturity, and its relevance is strongly supported by empirical evidence. Berger et al. (2005) find that introducing Small Business Credit Scoring (SBCS) in the US meaningfully lengthens loan maturities for firms where information asymmetry is apparent. Maturity choice is then not only a risk management tool but also a response to information asymmetry. Further maturity-focused empirical studies confirm that factors including borrower risk, information opacity, and collateral quality are key determinants of maturity structure (Ortiz-Molina and Penas, 2008; Barclay and Smith, 1995). Environments with poor institutional integrity also shape lender behaviour. Fan, Titman and Twite (2012) show in their cross-country study that lenders who operate in high-corruption environments rely more on short-term debt, likely reflecting heightened informational frictions, and hence, extreme lack of trust.

It is also important to recognise that information asymmetry not only distorts maturity but can, in extreme cases, result in outright credit rationing. As shown by Stiglitz and Weiss (1981), lenders may optimally choose to ration credit rather than adjust contract terms like margins and maturity when borrower risk is unobservable. Consequently, reducing informational asymmetry is therefore likely to lead to more borrowing, longer debt maturities, and more stable capital structures.

Despite extensive research on the determinants of loan maturity, trust remains underexamined in the literature. While it is acknowledged that trust can diminish perceived risk and operate in place of formal enforcement mechanisms (Guiso, Sapienza and Zingales, 2008), so far, this insight has not been incorporated into empirical tests of debt maturity. It is likely that studies implicitly assume that borrower-lender interactions are assessed by a combination of hard information and formal legal enforcement. This approach may, however, neglect the role that soft information, including interpersonal or institutional trust, may have an impact on lenders' willingness to commit to longer-term financing.

2.2 Trust as a Mechanism in Financial Contracting

The interplay between informational asymmetry and how banks view risk is well established, however, trust's omission is notable given the abundance of evidence that shows how trust facilitates economic exchange. In environments characterised by economic, legal, geographic, or cultural differences, trust can function as an informal substitute for hard information, reducing perceived risk and enabling transactions that may not otherwise occur. Guiso, Sapienza and Zingales (2006, 2008, 2009) provide empirical evidence that trust, defined as individuals' beliefs about the trustworthiness of citizens of another country, has a significant effect on economic behaviour between countries. For the most part, individuals from higher-trust societies are more likely to participate in financial markets and invest in equities (Guiso, Sapienza and Zingales, 2008). In

an earlier paper, Guiso, Sapienza, and Zingales (2004) found that higher levels of trust between European countries raise bilateral trade across goods, financial assets, and direct investment. They argue trust mitigates the perceived risk of opportunistic behaviour, lowering transaction costs.

In the financial markets, trust has also been shown to affect the cost and structure of capital flows. One of the few papers that link levels of trust directly to maturity, albeit focusing on sovereign lending, finds that trust-based stereotypes significantly influence the maturity of loans (Eichengreen and Saka, 2022). In their study, a one standard deviation increase in trust raises the probability that a sovereign loan will exceed five years by 14%. Trust, therefore, influences whether a loan is made and for how long lenders are willing to remain exposed.

Moreover, Guiso, Sapienza, and Zingales (2009) provide evidence that increases in cultural distance systematically reduces bilateral trust between countries, even after controlling for institutional quality and legal framework's similarity. Building on this, Mian (2006) demonstrates that greater geographic and cultural distance between a foreign bank's headquarters and its local operations suppresses relational lending, impedes renegotiation, and worsens loan recovery not due to legal or informational constraints but because distance undermines trust.

In spite of the plethora of evidence on trust affecting economic outcomes, corporate lending literature has largely overlooked its role in shaping contract terms, particularly debt maturity. Indeed, studies that mention related themes tend to examine pricing or syndicate composition. For instance, Giannetti and Yafeh (2012) analyse international syndicated loans and show that cultural differences between lead arrangers and borrowers are associated with higher spreads and increased collateral requirements. Although they do not test trust explicitly as a mechanism, Giannetti and Yafeh (2012) find that repeated interactions between lenders and borrowers tend to lengthen loan maturity. However, they concede that cultural distance by itself only partially explains this effect.

Finally, and perhaps most interestingly, Guiso, Sapienza and Zingales (2006) emphasise that trust becomes especially important when transactions involve unfamiliar counterparties and must be sustained over longer horizons. This is particularly relevant when considering participant-arranger-borrower relationships in syndication, where contracts are both capital-intensive and long-term.

2.3 Why Syndication?

Syndicated lending is precisely the kind of institutional setting where trust, or its absence, may meaningfully shape loan maturity. Syndication often involves lenders with no prior direct interaction with the borrower, particularly in the case of participant banks (Howcroft, Kara and Marques-Ibanez, 2014), yet requires coordination around large, long-term exposures. Similarly, while the lead arranger normally has an existing relationship with the borrower and drafts the term sheet (Howcroft, Kara and Marques-Ibanez, 2014), participants are involved at arm's length, relying on the arranger's monitoring and certification (Sufi, 2007).

This results in information asymmetry on two levels: within the syndicate itself and between lenders and borrower. Ivashina (2009) shows that arrangers retain larger loan shares in opaque deals, signalling commitment to monitoring, however, participant lenders, without informational advantages or borrower familiarity, may remain uncertain about borrower quality. Cross-border deals likely heighten this effect as geographic and cultural distance further erodes confidence (Guiso et al., 2006) and increases reliance on borrower familiarity.

Still, the literature covering syndicated lending remains focused on pricing, participation structure, or lead arranger behaviour. To the best of our knowledge, the influence of bilateral trust on loan maturity received little attention in the academic literature: there is no detailed study that has used loan-level data to test whether these dynamics in the syndicated loan market affect the maturity of the exposure.

We address this by capturing two distinct dimensions of relational uncertainty. First, as we describe further in our methodology, our independent variable, *Demeaned Bilateral Trust*, captures the difference between a lender's trust towards a borrower country from their mean level of trust towards all countries, measured at the country-pair level. Second, we construct a familiarity variable (precedence), measuring where there have been prior interactions between each lender-borrower pair at the loan date. These are then complemented by an indicator (i.e. a "dummy") variable for arranger status, capturing informational advantage and monitoring capacity. Together, these test variables allow us to isolate the effect of bilateral trust on maturity in syndicated lending.

2.4 Contribution and Research Gap

Each of the core concepts at the centre of our analysis, maturity, trust, and syndication, has been studied to the same extent in isolation and their intersection remains largely unexplored. The debt maturity literature continues to focus on observable firm risk, credit quality, and agency problems. The trust literature, by contrast, has demonstrated the relevance of generalised trust for economic outcomes such as trade, investment, and pricing, but rarely, if ever, examines its role in shaping financial contract terms. Syndicated lending, meanwhile, has been analysed primarily in relation to pricing, syndicate formation, and the behaviour of lead arrangers.

Syndicated loans are exactly the kind of multi-party, high-stakes contracts where trust, particularly in cross-border settings, should influence how long lenders are willing to remain exposed. Even then, no previous study has tested whether bilateral trust between countries, beyond lender familiarity or arranger monitoring, affects loan maturity.

Our empirical study combines these three strands of literature and addresses this gap by showing that trust is not merely a factor in access or pricing, but a determinant of loan tenor.

Specifically:

- We contribute to the maturity literature by introducing bilateral trust as a determinant of corporate loan

maturity, moving beyond traditional firm and loan-level explanations.

- We extend the trust literature into financial contract structuring, not just economic exchange outcomes.
- We leverage syndicated loans as a natural setting to test the role of bilateral trust in contract design.

3 Hypotheses

Building on the preceding literature review, we hypothesise that bilateral trust acts as a mediating force that mitigates information asymmetry in cross-border syndicated lending, thereby enabling lenders to extend maturities over longer horizons. More generally, we hypothesise that when lenders perceive borrowers' countries as more trustworthy, they are more likely to commit to longer-term debt contracts, even in the presence of information asymmetry.

We formulate the following sub-hypotheses for each regression:

H1 – Core Regressions: Higher bilateral trust between lender and borrower countries compensates for information asymmetry and predicts longer loan maturities in EU syndicated lending.

H2 – Heterogeneous Effects of Trust by Maturity Category: The effect bilateral trust has on maturity will not be constant across maturity categories. Long-term loans entail greater uncertainty and information asymmetry, while short-term loans are more sensitive to rollover risk (Diamond, 1991). Hence, trust may influence both ends of the maturity spectrum in different manners.

- **H2a – Long-Term Loans (>120 Months):** The effect of bilateral trust will be stronger for long-term loans relative to medium-term loans.
- **H2b – Short-Term Loans (<24 Months):** The effect of bilateral trust will be stronger for short-term loans relative to medium-term loans.

H3 – Heterogeneous Effects of Trust by Loan Purpose: We hypothesise that the effect of bilateral trust on loan maturity differs depending on the complexity (and hence, the level of information asymmetry) of the loan purpose compared to *General Corporate Use* loans.

- **H3a – Project/Asset Finance:** The contractual complexity involving multiple stakeholders, combined with the extended deal origination timeline, will heighten the relevance of bilateral trust on maturity due to the significant information asymmetry inherent in such transactions.
- **H3b – M&A:** We hypothesise that bilateral trust will be highly relevant in extending maturity for *M&A*. This purpose is marked by uncertainty and numerous challenges to navigate and is the most capital-intensive in our dataset.
- **H3c – LBO/Sponsor-Backed:** We hypothesise that the effect of bilateral trust on loan maturity for *LBO/Sponsor-Backed* loans will increase maturity but have a limited affect. These are more standardised than the above purposes and general partner-lender relationships likely diminish the role of bilateral trust in determining loan terms.

H4 – Heterogeneous Effects of Trust by Borrower Size: Bilateral trust will have a stronger influence on loan maturity for small borrowers than for large and medium sized borrowers. Small borrowers are less well-known, exhibit higher information asymmetry (Berger et al., 2005) and can post less collateral, by nature of their size. This increases lenders' reliance on soft information like bilateral trust when evaluating the length of loan maturity. Large borrowers, by contrast, have more established reputations and lenders can more easily access external information about the borrower, reducing the impact of trust in the loan maturity decision.

H5 – Salience under Macroeconomic and Political Shocks: The influence of bilateral trust on loan maturity will vary during periods of heightened uncertainty. When formal enforcement mechanisms weaken or become less predictable, lenders will respond by being increasingly reliant on soft information, amplifying bilateral trust's effect on maturity.

- **H5a – 2008 Global Financial Crisis:** During the Global Financial Crisis, bilateral trust will play a more important role post-crisis in securing longer maturities. This is due to lenders' increased reliance on risk-metrics conveyed by soft information.
- **H5b – Southern European Sovereign Debt Crisis:** Bilateral trust will display a stronger effect during the Southern European Sovereign Debt Crisis (2010–2012), when lenders looked to soft information to evaluate borrower-risk.
- **H5c – Brexit:** Bilateral trust will become more salient post-Brexit (2016 onwards), as regulatory divergence and political uncertainty increases reliance on soft information-based risk metrics.

4 Data

We begin by presenting the base loan-level dataset from DealScan, focusing on syndicated corporate loans originated between 2002 and 2022. We describe the main variables of interest, including maturity, deal size, borrower and lender details, and loan purpose. We then outline the set of explanatory variables used throughout the analysis, including loan structure characteristics such as loan type. The dataset is further enriched by merging macro-financial indicators - GDP, inflation, and credit-to-GDP ratios - as well as institutional quality measures (e.g., WGI scores). We detail how bilateral trust from the Eurobarometer survey is computed and how the loan purpose field is grouped into broader clusters. We also describe the construction of dummy variables for borrower size and maturity categories to enable interaction terms in the regression. Finally, we provide an overview of the geographical and temporal coverage of the sample, including the number of countries represented and the evolution of loan volumes over time.

4.1 Data Sources

Our empirical analysis is based on a newly constructed panel dataset that combines syndicated loan-level data with macroeconomic, institutional, and financial market variables at the country level. The core of the

analysis relies on data from Refinitiv LPC's DealScan database, which provides detailed information on private loan contracts in the global syndicated lending market.

The resulting dataset includes 223,257 syndicated loans. From DealScan, we extract the identity and nationality of the borrower and lead lender (at the parent level), the loan maturity (in years), standardised loan amounts (USD), primary loan purpose, presence of collateral, and the number of lenders in the syndicate. Additionally, we construct a precedence variable capturing the historical lending relationship between each borrower and lead lender based on prior co-occurrence in the database. The deal active date is used to assign loan-year observations for merging with time-varying country-level data. This loan-level dataset forms the foundation of the empirical analysis.

Macro-financial indicators are merged at the borrower and lender country-year level from external sources. GDP growth and inflation (CPI) are obtained from the World Bank's World Development Indicators (WDI). Domestic credit market development is proxied by private credit-to-GDP, sourced from the World Bank's Global Financial Development Database (GFDD).

The key explanatory variable is a bilateral trust score derived from Eurobarometer surveys. According to Guiso, Sapienza and Zingales (2009, p.1102) respondents were asked: "I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust (4), some trust (3), not very much trust (2), or no trust at all (1)." The score assigned to the respondents' answer are depicted in parenthesis. This measure varies by country-pair and year and captures the average trust level of citizens in one country toward those of another, serving as a proxy for informal contract enforcement. This can be seen in Table 11 of the Appendix.

To account for institutional quality, we incorporate measures from the World Bank's Worldwide Governance Indicators (WGI), including political stability and rule of law indices.

To capture market perceptions of sovereign risk and monetary policy stance, we construct two additional measures using sovereign yield data from Refinitiv. The first is the borrower country's sovereign spread, defined as the difference between its 10-year sovereign yield and the 10-year German Bund yield. The second is the steepness of the sovereign yield curve, measured as the difference between the 10-year and 2-year yields for the borrower country.

Different portions of the merged dataset are used in the various specifications and robustness checks throughout the analysis. For example, regressions involving enforcement or political variables rely on subsets of the data for which the corresponding institutional indicators are available. Likewise, some robustness tests are limited to euro area countries or post-crisis years. Each regression table specifies the final sample size and any filters applied.

4.2 Sample Period and Inclusion Criteria

4.2.1 Sample Period

We restrict our analysis to syndicated loans signed between 2002 and 2022 in order to span two decades of distinct credit and regulatory environments. This period covers the full credit cycle, encompassing expansionary lending phases, crisis episodes, and major institutional and policy shifts that affect both the supply and structuring of credit. These turning points allow us to study not only the baseline role of trust and institutions in loan maturity decisions, but also how their relevance varies across regimes of financial distress and regulatory change. We exploit the following key events for identification:

2002–2007: Pre-Crisis Credit Expansion. This phase was characterized by ample liquidity, low interest rates, and rapid growth in cross-border syndicated lending within Europe. We treat this period as the baseline against which subsequent shocks and frictions can be compared.

2008–2009: Global Financial Crisis (GFC) - The GFC triggered a sudden contraction in lending and a revaluation of borrower risk. Popov (2014) shows that during financial crises, informational asymmetries widen and the role of informal mechanisms like trust becomes more pronounced.

Test: We introduce an interaction between trust and a post-2008 dummy to evaluate whether trust had a stronger effect on loan maturity during and after the crisis period.

2010–2012: European Sovereign Debt Crisis - Concentrated primarily in Southern Europe, this episode led to acute sovereign risk re-pricing and raised concerns over domestic banking stability.

Test: We monitor changes in maturity for borrowers from crisis-exposed countries and explore whether trust served as a mitigating factor.

2016 onward: Brexit and Regulatory Divergence - The 2016 Brexit referendum and the UK's subsequent exit from the EU created a legal and regulatory decoupling that increased uncertainty and information frictions in cross-border lending involving UK counterparties. The erosion of common EU legal infrastructure may have amplified the importance of trust in financial contracting.

Test: We interact bilateral trust with a post-2016 dummy for loans involving UK borrowers or lenders to test whether trust became more salient in the post-Brexit landscape.

Together, these distinct time windows provide meaningful variation to identify both the baseline effects of trust and institutions and their evolving role in response to systemic shocks and regulatory change. By anchoring our empirical strategy around these events, we complement the cross-sectional analysis with rich within-period identification.

4.2.2 Country Selection

We extract loan deals involving borrowers located in 13 European Union countries and the United Kingdom, specifically: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the UK. These countries not only align with Eurobarometer survey coverage - crucial for our trust measures - but also represent relatively deep and competitive credit markets within Europe. The presence of diversified banking sectors in each country helps ensure that national-level lending behaviour is not dominated by a small number of institutions, mitigating concerns that results are driven by idiosyncratic bank-level policies rather than broader market dynamics. The descriptive statistics of the countries selected for the study can be found in Table 12 and Table 13.

4.3 Variable Construction

4.3.1 Construction of the Demeaned Trust Variable

Our key explanatory variable is bilateral trust. This variable, denoted Trust_{ij}, captures the average level of trust that respondents in country i express toward citizens of country j, and is available for a panel of European countries across multiple years.

However, bilateral trust scores embed both dyadic and non-dyadic components. Specifically, Trust_{ij} reflects (i) how trusting country i is overall, (ii) how trustworthy country j is perceived to be, and (iii) the unique, idiosyncratic relationship between i and j. For example, some countries, such as Sweden, consistently report higher levels of generalized trust, while others, like Portugal, are less trusting on average.

To recover the true dyadic variation in trust - that is, the deviation of trust in country j relative to country i's average view of others - we row-center the matrix:

$$\widetilde{\text{Trust}}_{ij} = \text{Trust}_{ij} - \frac{1}{N-1} \sum_{k \neq j} \text{Trust}_{ik}$$

This transformation removes the source-country bias and allows us to interpret $\widetilde{\text{Trust}}_{ij}$ as the extent to which country i trusts country j more or less than it trusts other countries.

Table 2, is used to explain the importance of row-centering (demeaning). Both Sweden and Portugal trust Germany at different raw levels, it is Sweden's *relative* trust (only slightly above its average) and Portugal's *below average* trust that matters in identifying bilateral variation. The adjusted trust score for Germany would be $3.13 - 3.12 = 0.01$ for Sweden, and $2.54 - 2.68 = -0.14$ for Portugal.

Two-way country fixed effects would have the same demeaning effect, but we selected row-centering for two key reasons. First, our focus is on a dyadic variable Trust_{ij}, not a full ijt triadic panel. Including both origin

and destination fixed effects in a panel regression where the trust measure varies only by ij and year would absorb most of the variation in Trust_{ij}, undermining identification. Second, with 14 countries in our sample, introducing 28 country dummies (lender + borrower) risks overfitting and exacerbating multicollinearity. Indeed, when estimating an augmented model with both country-of-origin and country-of-destination fixed effects, we observed variance inflation factors (VIFs) exceeding 30 for several regressors - indicating serious redundancy and instability in coefficient estimates.

4.3.2 Construction of General Control Variables

Purpose Cluster (Loan-Level Categorical Control): We include fixed-effects for loan purpose clusters to control for systematic differences in maturity arising from the underlying purpose of the loan. For instance, loans classified under *Project / Asset Finance* have an average maturity of **10.7 years**, reflecting long-term capital deployment, while those under *Trade / Short-Term Liquidity* average just **2.8 years**, consistent with their transitory funding role. Without accounting for such structural variation, the effect of trust and institutional variables may be confounded by differences in contractual design. To reduce dimensionality and mitigate multicollinearity, we group over 30 primary purpose labels from DealScan into a smaller set of economically meaningful clusters. This approach preserves explanatory power while ensuring more stable and interpretable coefficient estimates. As shown in Figure 1 and Table 14, the clustering preserves key maturity distinctions while keeping standard errors at manageable levels, confirming the consistency and econometric validity of our classification.

Borrower GDP Growth: We control for both borrower country GDP growth rates to capture macroeconomic performance and its influence on credit market behaviour. GDP growth serves as a forward-looking indicator of economic momentum and is more predictive of loan contract terms than static measures like GDP levels (Rajan and Zingales, 1995; Beck, Levine and Loayza, 2000; Houston, Lin and Ma, 2012). High GDP growth in the borrower country signals a stronger repayment environment, reduced credit risk, and greater investment opportunities, which can incentivise lenders to offer longer maturities. Conversely, weak or negative growth is associated with increased default risk, which often prompts lenders to reduce exposure duration. Lender-side GDP growth is equally important: it reflects domestic capital availability and economic slack that affects banks' foreign risk appetite. In periods of robust growth at home, lenders may be more willing to take on cross-border risk and offer longer maturity loans abroad. During domestic downturns, however, capital may be reallocated locally or withheld altogether, leading to more conservative loan terms for foreign borrowers (Gianetti and Laeven, 2012). Importantly, by including GDP growth from both the borrower and lender perspective, we absorb macroeconomic "hard information" that may otherwise be confounded with interpersonal trust. For instance, a high-growth borrower may be perceived as more trustworthy due to strong fundamentals - even if that trust is not rooted in social or cultural proximity. By controlling for GDP growth, we ensure that the estimated "bilateral trust effect" reflects informal relational mechanisms rather than differences in economic performance.

Borrower Inflation: We include borrower-country inflation rates - measured using contemporaneous Consumer Price Index (CPI) data - as macroeconomic control variables to account for monetary instability and the cost of capital in the borrower's jurisdiction. Inflation directly affects the real value of future repayments and thereby reduces lenders' willingness to extend long-term credit (Fan, Titman and Twite, 2012). This control is especially important in a cross-border context, where macroeconomic volatility and bilateral trust can be confounded. A country experiencing unstable inflation may also be perceived as untrustworthy due to poor economic governance - even when interpersonal trust between lender and borrower is high. By explicitly controlling for inflation using observed CPI values, we isolate the informal, perception-based component of trust from macro-level 'hard information' that is systematically available to all lenders. We use current-year inflation rather than lagged values, under the assumption that syndicated loan pricing and structuring decisions at time t are informed by the latest available macroeconomic indicators, including inflation expectations embedded in contemporaneous CPI trends.

Borrower Country's Sovereign Credit Spread: We include the borrower country spread, measured as the difference between the 10-year government bond yield of the borrower's country and the 10-year German Bund yield, to account for perceived sovereign credit risk and market-based pricing of country-specific fundamentals. This spread is widely recognized as a real-time proxy for the default risk of a country's government and reflects the yield premium investors demand for holding sovereign debt over a benchmark "safe asset" such as the German Bund (Codogno, Favero and Missale, 2003; Bernoth and Erdogan, 2012; Augustin et al., 2014).

Higher spreads typically reflect deteriorating fiscal conditions, political risk, or declining investor confidence - all of which increase the perceived credit risk of private borrowers within that jurisdiction (Eichengreen and Mody, 2000). Lenders may respond by shortening maturities to limit their exposure horizon, irrespective of interpersonal trust between borrower and lender. These signals may correlate with or even overshadow informal trust-based mechanisms. For instance, a borrower in a high-spread country may be perceived as risky not because of low bilateral trust, but due to broader fiscal instability. By including the country spread, we absorb this macro-financial risk and better isolate the effect of soft information such as bilateral trust.

Borrower Country's Domestic Yield Curve Steepness: We include the yield curve steepness in the borrower's country, defined as the difference between the 10-year and 2-year government bond yields, to capture the domestic term structure of interest rates faced by corporate borrowers. A steeper yield curve is typically associated with expectations of economic expansion and greater term premia. In such an environment, borrowers have stronger incentives to borrow at shorter maturities to lock in low rates and rollover debt when necessary, whereas lenders would prefer to lend at longer maturities (Fama, 1990; Estrella and Hardouvelis, 1991; Gennaioli, Martin and Rossi, 2014). By contrast, a flat or inverted yield curve may increase the appetite for long-term borrowing, as the marginal benefit of borrowing further out along the curve is larger. As such, including this measure allows us to control for monetary and macro-financial factors

in the borrower country that shape both optimal lending and borrowing behaviour over the maturity spectrum. Without controlling for it, we risk conflating maturity preferences arising from macro yield conditions with those stemming from trust-based relationships.

Lender's Domestic Credit to GDP Ratio: We include the credit-to-GDP ratio in the lender country to control for the overall depth of the domestic financial system and the supply-side capacity to issue credit. This variable captures the extent to which banks and financial institutions in a country are accustomed to and capable of engaging in lending activities relative to the size of their economy. A higher credit-to-GDP ratio typically indicates a more developed banking sector, greater financial intermediation, and a stronger ability to provide long-term loans (Beck, Levine and Loayza, 2000; Levine, 1997). From the perspective of cross-border lending, this control helps separate the effect of bilateral trust from differences in financial infrastructure and credit availability. For example, a lender country with low financial development may be less willing or able to issue long-term loans abroad - not due to lack of trust in the borrower, but due to structural constraints. Conversely, highly developed credit markets may support longer-term maturities even in lower-trust contexts, purely due to institutional robustness.

WGI: Rule of Law and Political Stability (Country-Level Institutional Controls): To control for cross-country differences in legal and political environments - core components of "hard information" used in lending decisions - we include two indicators from the World Bank's Worldwide Governance Indicators: *Rule of Law* and *Political Stability*. These variables proxy for a country's legal reliability and political predictability, respectively - factors that are directly incorporated into banks' internal risk ratings and required under frameworks like Basel II/III. Institutions are subject to regulatory constraints (e.g., OFAC sanctions, EU restrictive measures) that prevent lending to jurisdictions deemed politically unstable or corrupt, regardless of borrower-specific fundamentals. By including these controls, we absorb the influence of formal, verifiable governance risks that shape lending through official compliance and credit assessment processes. This allows us to isolate the role of bilateral trust as a form of "soft information" - distinct from institutional quality and not captured in formal lending rules.

Precedence (Lender-Borrower Relationship Control): To account for institutional familiarity beyond country-level trust, we include a binary *Precedence* control equal to one if a given lender–borrower pair has transacted previously. This captures "hard" relationship-based information, such as repayment history or internal credit assessments, which may influence loan maturity independently of interpersonal trust. We adopt a binary specification to ensure stability across sparsely observed dyads and avoid overfitting from cumulative counts. Including this control allows the coefficient on trust to reflect the effect of soft, informal perceptions - net of any relationship-driven informational advantages.

Primary Role (Lender Information Control): We include a *Primary Role* dummy equal to one if the lender held a lead role in the syndicate - such as Lead Arranger, Mandated Lead Arranger, or Bookrunner - and zero otherwise. This control captures systematic differences in information access and involvement in structuring the loan. Lead institutions typically engage in borrower due diligence, coordinate pricing and covenants, and maintain direct negotiation channels, whereas non-lead participants rely more on shared documentation (Howcroft, Kara and Marques-Ibanez, 2014). By controlling for primary role, we isolate the effect of *Bilateral Trust* as an informal interpersonal perception, independent of the information advantages inherently available to lead arrangers. This ensures that our estimates do not conflate trust with superior access to "hard" information or structural influence in the lending process.

Creditor Enforcement (Country-Level Legal Control): While we could control for formal legal protection using the *Creditor Rights Enforcement Index* from Djankov et al. (2008), we choose not to include it in our regressions due to the presence of borrower fixed effects. The index, which captures the time, cost, and procedural complexity of enforcing a loan contract through the courts, is time-invariant and varies only at the borrower country level. Because borrower fixed effects absorb all country-level time-invariant variation, including the index would offer no additional explanatory power. Nonetheless, the index remains a conceptually relevant proxy for the quality of formal contract enforcement institutions and is useful in framing the role of informal trust in creditor-borrower relationships.

4.3.3 Variable Construction for Subsample Study: Maturity Buckets and Borrower Size

Loan Maturity Classification: We classify loan maturities into three categories: *Short-Term* ($\leq$24 months), *Medium-Term* (25–120 months), and *Long-Term* (>120 months). Initially, we considered a 12-month threshold to align with conventional classifications for short-term debt instruments (e.g., commercial paper, per BIS and Bloomberg DDIS definitions). However, this definition resulted in an insufficient number of observations due to the rarity of syndicated loans with maturities under 12 months. To address this issue, we expanded the short-term boundary to 24 months, more accurately reflecting actual market practices, where syndicated borrowing typically involves maturities longer than one year. The medium-term (25–120 months) and long-term (>120 months) categories remain aligned with industry norms, particularly the long-term cutoff associated with infrastructure and project finance (Booth et al., 2001). This adjusted classification also allows us to effectively capture theoretical insights that longer maturities amplify the importance of trust and relational factors due to greater uncertainty (Dell'Ariccia and Marquez, 2004; Berg, Dickhaut and McCabe, 1995). Dummy variables for each maturity bucket are generated via one-hot encoding and employed in subsequent heterogeneity analyses.

Borrower Size Classification: To assess whether trust operates differently across borrower segments, we classify borrowers into small, mid-sized, and large categories based on their total notional exposure across

syndicated loans. Specifically, we aggregate total deal amounts per borrower (after deduplication) and define *Large Borrower* as those above the 95th percentile of the notional distribution, *Small Borrower* as those below the 30th percentile, and the remaining as *Medium Borrower*. This percentile-based segmentation allows for flexible and empirically grounded classification while maintaining comparability across the dataset. It echoes conventions in credit risk and syndicated loan pricing literature, where borrower size - measured by exposure - is a central determinant of monitoring intensity and bargaining power (Berkovitch and Israel, 1999; Denis and Mihov, 2003).

Since detailed firm-specific size data (e.g., market capitalization, total assets) is unavailable, we proxy borrower size using the cumulative notional amount of loans issued to each borrower. This method leverages the reasonable assumption that smaller firms are unlikely to have substantial borrowing capacities, allowing us to approximate their size based on borrowing activity. We generate three binary indicators: *Large Borrower*, *Medium Borrower*, and *Small Borrower* - used for both descriptive statistics and panel subsample regressions.

See Table 3 in the appendices for a summary of the regressors and controls used throughout the paper.

5 Empirical Methodology

We investigate whether bilateral trust influences the maturity of syndicated cross-border loan maturities in Europe. The dependent variable, $Maturity_{ijt}$, captures the contractual maturity in years of loan i, originated by a lender from country j to a borrower in country i, in year t. The methodology section begins by presenting a baseline empirical strategy: a linear panel regression estimating the effect of bilateral trust on loan maturity. We incrementally develop this model across a series of specifications. The base specification includes fundamental loan-level variables, such as borrower and lender identities, loan amount, and primary purpose. We then extend the model by introducing macroeconomic and institutional variables - including inflation, GDP growth, credit-to-GDP ratios, governance indicators, and yield curve proxies - to form the full specification. Next, we explore heterogeneous effects through interaction terms. We first interact the demeaned trust variable with categorical maturity buckets (short-term, medium-term, long-term) to assess whether trust affects the structure of debt tenors differently. We then interact trust with borrower size (small, mid-size, large) to test whether the impact varies based on the borrower's market position. Additional interaction terms are constructed to examine borrower types, including whether the borrower is a financial institution or a corporation. To assess how the relationship between trust and loan maturity changes in response to macro-level disruptions, we conduct separate interaction analyses for key economic shock periods: the Global Financial Crisis, the European Sovereign Debt Crisis, and the Brexit referendum period. These interaction models help identify whether trust plays a heightened or diminished role under stress conditions. Throughout, we control for borrower-year and lender-country fixed effects to account for unobserved heterogeneity, and we cluster standard errors at the borrower-country level. Finally, we assess multicollinearity using VIF scores, test for heteroskedasticity using the Breusch-Pagan test, and validate the trust effect via a placebo permutation test.

5.1 Baseline Empirical Specification and Panel Structure

We estimate a baseline panel regression to assess the effect of bilateral trust on the maturity of syndicated loans. The hypothesis under investigation is **H1: Higher bilateral trust between lender and borrower countries predicts longer loan maturities in EU syndicated lending**. The dependent variable is the contractual loan maturity in years. The key explanatory variable is a country-pair-level trust score, time-invariant and externally sourced from Eurobarometer surveys. We estimate the model using a two-way fixed effects panel OLS specification:

$$Maturity_{ijt} = \alpha + \beta \cdot Trust_{ij} + \sum_k \delta_k \text{Purpose}_{kit} + \gamma_i + \lambda_t + \varepsilon_{ijt} \tag{1}$$

The regression is run on a panel indexed by borrower country i and year t, with j denoting the lender country. We include **borrower-country fixed-effects** γ_i to absorb all unobserved time-invariant borrower characteristics - such as legal tradition, financial development, or political history - that could confound the effect of trust. **Year fixed-effects** λ_t account for global shocks or business cycle trends, such as monetary tightening or regulatory harmonization, that affect all countries simultaneously.

Because the trust variable $Trust_{ij}$ is time-invariant and varies only at the dyadic level, including lender-country fixed effects would absorb all identifying variation. By excluding lender fixed effects and instead using borrower fixed effects, we preserve the variation necessary to identify β, while still accounting for unobservable heterogeneity on the borrower side. This setup is common in empirical research using cross-country panel data with dyadic variables, particularly when one dimension of the dyad (here, the lender) holds the explanatory variable of interest.

We proceed in a stepwise manner. The *Baseline Specification* includes only trust and a set of loan purpose dummies. We then add macroeconomic controls on both the borrower and lender sides - GDP growth, inflation, yield curve slope, credit spread, credit-to-GDP ratio - forming the *Macro Controls* specification. Finally, we add institutional quality indicators (judicial efficiency and World Governance Indicator for political stability) to create the *Full Model* specification. The model is estimated using the `PanelOLS` estimator with robust standard errors. All regressions include borrower country fixed-effects and year fixed-effects. This layered approach allows us to test the robustness of the trust coefficient β against a sequence of increasingly rich observable controls.

Macro Controls Specification: In the second stage, we augment the baseline specification with a comprehensive set of macroeconomic controls that capture borrower- and lender-side fundamentals affecting the loan maturity decision. The equation estimated is:

$$Maturity_{ijt} = \alpha + \beta \cdot Trust_{ij} + \mathbf{X}'_{it}\theta + \mathbf{Z}'_{jt}\phi + \sum_k \delta_k \text{Purpose}_{kit} + \gamma_i + \lambda_t + \varepsilon_{ijt} \tag{2}$$

where $\mathbf{X}_{it}$ includes borrower-country GDP growth, inflation, yield curve steepness, and sovereign credit spread, while $\mathbf{Z}_{jt}$ includes lender-country GDP growth, inflation, and credit-to-GDP. We also include two dummy variables: one for whether the lender holds a *Primary Role* in the syndicate (e.g., Lead Arranger), and another for capturing whether the lender has previously transacted with the borrower (the *Precedence* dummy). These account for information asymmetries and institutional familiarity that may bias the effect of trust.

This specification controls for the "hard information" observable to all market participants and used in risk pricing models, ensuring that the estimated coefficient on $Trust_{ij}$ reflects the influence of interpersonal or informal expectations not otherwise captured in macroeconomic observables.

Full Specification with Institutional Controls: Finally, we introduce borrower-side institutional quality indicators to account for formal governance environments that influence contractual enforcement. The full model is:

$$Maturity_{ijt} = \alpha + \beta \cdot Trust_{ij} + \mathbf{X}'_{it}\theta + \mathbf{Z}'_{jt}\phi + \mathbf{I}'_{it}\psi + \sum_k \delta_k \text{Purpose}_{kit} + \gamma_i + \lambda_t + \varepsilon_{ijt} \tag{3}$$

where $\mathbf{I}_{it}$ includes *judicial efficiency* (proxied by the World Governance Indicator). These are included to ensure that trust effects are not spuriously driven by observable political or legal risk. Controlling for these formal dimensions isolates the "soft" informational component of trust from institutional quality, which represents codified rules that banks and rating agencies incorporate into lending decisions.

Together, these three specifications form our core empirical strategy to test Hypothesis 1: higher bilateral trust between lender and borrower countries compensates for information asymmetry and predicts longer loan maturities in EU syndicated lending. Later sections will explore H2 and H3 - whether this effect is more pronounced for longer maturities or for smaller borrowers - by estimating the full specification on relevant subsamples.

5.2 Trust Interaction Regressions with Contract Characteristics

To examine whether the impact of bilateral trust on loan maturity varies across different contractual environments, we estimate a fixed-effects panel regression that incorporates interaction terms between demeaned bilateral trust and categorical loan characteristics. Instead of relying on subsample splits, we introduce interaction terms directly into a unified regression model. This approach retains the full sample size, preserves statistical power, and permits formal inference on differences in the trust effect across groups.

We focus on three categorical dimensions that plausibly moderate the trust-maturity relationship: loan maturity type, borrower size, and loan purpose. For maturity, we distinguish between short-term loans (12 months or less), medium-term loans (13 to 120 months), and long-term loans (over 120 months). Borrowers are classified as small, mid-sized, or large based on their total syndicated loan exposure, with cutoffs based on the 30^{th} and 95^{th} percentiles of the notional distribution. Loan purpose is categorized using standardized clusters such as general corporate use, M&A, LBO, and project or asset finance. These categories are well-established in syndicated lending research and align with both theoretical and empirical distinctions in borrower risk and lender behaviour.

The estimation follows the specification below:

$$\text{Maturity}_{ijt} = \alpha + \beta_1 \widetilde{\text{Trust}}_{ij} + \sum_k \gamma_k \text{Category}_k + \sum_k \delta_k (\widetilde{\text{Trust}}_{ij} \times \text{Category}_k) + \mathbf{X}'_{ijt}\theta + \gamma_i + \lambda_t + \varepsilon_{ijt} \qquad (4)$$

In this equation, $\widetilde{\text{Trust}}_{ij}$ denotes the demeaned bilateral trust score from lender country j to borrower country i, and the Category_k terms represent dummy variables for each loan-level categorical characteristic. These are interacted with the trust variable to form the terms of primary interest. The matrix $\mathbf{X}_{ijt}$ contains all macroeconomic and institutional controls introduced in our baseline specification. The model includes borrower-country fixed-effects γ_i to control for all time-invariant borrower-side characteristics and year fixed-effects λ_t to absorb global time trends, regulatory changes, and macroeconomic shocks.

For identification and interpretability, we omit one level from each categorical variable to serve as a reference group. *Medium-Term* loans (13 to 120 months) are used as the reference for maturity, as they represent standard durations in syndicated debt. *Medium Borrower*s and *Large Borrower*s - those falling between the 30^{th} and 100^{th} percentiles of cumulative loan exposure - are chosen as the reference group for borrower size. Finally, *General Corporate Use* loans are selected as the reference purpose category, as they tend to involve conventional structures with minimal informational frictions. The coefficient on $\widetilde{\text{Trust}}_{ij}$ is thus interpreted as the trust effect for a loan that is medium-term, issued to a mid-sized borrower for general corporate use. Interaction coefficients quantify how this marginal effect of trust changes in non-reference scenarios.

This methodology allows us to test three specific hypotheses. First, we assess whether trust plays a greater role in long-term lending, where uncertainty and renegotiation risk are higher. Second, we evaluate whether trust is more important when lending to small borrowers, who often lack credit history, collateral, or transparency. Third, we investigate whether the effect of trust is heterogeneous across loan purposes, particularly in transactions that involve complex structures or high discretion, such as project finance or leveraged buyouts. All of these hypotheses are tested jointly in the interaction regression, which also includes all controls and fixed effects from the full specification used in our main analysis.

Compared to subsample regressions, the interaction-based approach has several advantages. It avoids the reduction in statistical power caused by splitting the data, ensures consistency in fixed effects and controls across subgroups, and permits direct statistical testing of differences in marginal effects across categories.

It also mitigates heteroscedasticity and multicollinearity concerns that arise when subsamples are small or imbalanced. By embedding heterogeneity tests within a single, fully specified regression, we maximize empirical rigour while maintaining clarity of interpretation.

Table 4 shows the interaction terms tested to further examine the effect of bilateral trust and their respective reference category. Regression (4) tests **Hypothesis 2**, whether the effect of bilateral trust differs between Short-Term and Long-Term loans using Medium-Term loans as the reference category. Regression (5) tests **Hypothesis 3**, whether the effect of bilateral trust differs across loan purpose clusters, in particular, via *Bilateral Trust* interaction dummies with *LBO*, *M&A*, and *Project/Asset Finance* clusters with *General Corporate Use* as the reference category. Regression (6) tests **Hypothesis 4**, whether the effect of bilateral trust differs depending on the size of the loan, by interacting *Bilateral Trust* with *Small Borrower*, the reference categories used are *Large Borrower*s and *Medium Borrower*s.

This approach allows us to test whether the impact of trust is magnified in settings where agency problems, contract incompleteness, or enforcement constraints are more pronounced - for example, in longer-term or larger-sized loans, or loans for projects with high asset specificity.

5.3 Temporal and Regional Heterogeneity in the Effect of Trust

To investigate whether the influence of bilateral trust on loan maturity varies across periods of economic stress or political upheaval, we estimate a set of panel fixed-effects regressions that interact demeaned bilateral trust with time- or geography-specific indicators. This design allows us to assess whether trust becomes more salient when formal contracting channels are likely to be disrupted or when informational and institutional uncertainty elevates the role of interpersonal confidence.

We focus on three distinct environments: the period following the Global Financial Crisis, the Southern European sovereign debt crisis, and the post-Brexit lending landscape. For each context, we construct a binary indicator capturing the onset of heightened economic or political uncertainty. The first indicator equals one for all loan observations dated after 2008, capturing potential regime shifts in liquidity provision, regulatory scrutiny, and risk aversion following the crisis. The second indicator captures loans issued between 2010 and 2012 to borrowers located in Southern Europe - specifically Italy, Spain, Portugal, and Greece - regions that experienced acute sovereign risk, fiscal retrenchment, and structural fragility. The final indicator identifies loans issued from 2016 onwards where either the borrower or the lead lender is domiciled in the United Kingdom, a proxy for geopolitical uncertainty related to the Brexit referendum and ensuing regulatory divergence.

Each regression incorporates the full set of borrower-side macroeconomic and institutional controls, as well as structural loan-level features such as deal purpose and borrower-lender familiarity. The estimation follows a saturated panel specification with borrower-country and year fixed effects. The empirical model takes the

following form:

$$\text{Maturity}_{ijt} = \alpha + \beta_1 \widetilde{\text{Trust}}_{ij} + \beta_2 \text{Shock}_{it} + \delta(\widetilde{\text{Trust}}_{ij} \times \text{Shock}_{it}) + \mathbf{X}'_{ijt}\theta + \gamma_i + \lambda_t + \varepsilon_{ijt} \tag{5}$$

In this framework, the coefficient δ captures whether the marginal effect of trust on contractual maturity differs during the relevant shock period. Fixed effects γ_i and λ_t control for time-invariant borrower-country characteristics and year-specific global shocks, respectively.

This approach allows us to test whether trust becomes more economically meaningful in periods of heightened contracting frictions, complementing theoretical insights from Guiso, Sapienza and Zingales (2006; 2009) and empirical findings such as those in Eichengreen and Saka (2022). Specifically, it speaks to the hypothesis that trust plays a disproportionately larger role when reliable hard information is absent or when enforcement institutions are weakened. Our specification enables us to evaluate whether the trust-maturity relationship intensifies in systemically fragile contexts and, by extension, whether trust functions as a substitute for formal governance infrastructure in financial contracting. The results provide a test of conditional salience, not just of whether trust matters in general, but of when and where it matters most.

Table 5 describes our interaction regressions with macroeconomic and political shocks. Specifically, regression (7) tests the effect of bilateral trust in the aftermath of the Global Financial Crisis with our Trust $\times$ Post-2008 Dummy (loans extended from 2009 onwards) capturing the effect. Regression (8) tests the effect of bilateral trust after the Southern European sovereign debt crisis, captured through Trust $\times$ Sovereign Crisis dummy (loans to Italy, Spain, Portugal and Greece between 2010-2012). Lastly, we check the aftermath of Brexit to investigate whether Trust persists through the Trust $\times$ Brexit dummy (loans from 2016 onward involving either UK borrowers or lead lenders).

6 Results & Discussion

As detailed throughout Section 5, we examine the relationship between bilateral trust and syndicated loan maturity incorporating borrower country and year fixed-effects by a fixed-effects panel regression. Our core regressions test **Hypothesis 1** which posits that **higher bilateral trust between lender and borrower countries compensates for information asymmetry and predicts longer loan maturities in EU syndicated lending**. Across all specifications, bilateral trust consistently emerges as a statistically significant and economically meaningful determinant of loan maturity, however, there is heterogeneity in the results that is discussed in the interaction-based specifications.

Throughout this section we report our results and discuss them simultaneously. First, we analyse our results for our core regressions, which include a simplified regression which accounts for loan purpose (through clusters) and incorporates borrower country and year fixed-effects to account for unobserved heterogeneity. This is followed by augmented specifications that include macroeconomic and institutional controls to assess

robustness. Second, we evaluate model diagnostics to ensure reliability. Finally, we explore heterogeneous effects through interaction regressions to examine how trust's impact varies across maturity categories, loan purposes, borrower sizes, and shock events.

6.1 Core Regressions

6.1.1 Baseline Model

Column (1) of Table 6 reports estimates from a fixed-effects panel regression of loan maturity on bilateral trust. In our baseline model, *Bilateral Trust*, our primary explanatory variable, measuring bilateral trust between lender and borrower countries, is positive and statistically significant ($\beta = 0.1734$ years, $p < 0.01$). This implies that a one-unit increase in bilateral trust relative to the average trust score in the sample is associated with an expected increase of approximately 2 months in loan maturity across all purpose types. This result supports our core hypothesis **H1: higher bilateral trust between lender and borrower countries compensates for information asymmetry and predicts longer loan maturities in EU syndicated lending**. Most importantly, it implies that lenders are biased when evaluating borrower quality. The EU lenders in our sample systematically provide longer maturities to countries they perceive as more trustworthy, and shorter maturities to those they perceive as less trustworthy.

Loan purpose dummies are included to control for and ensure our estimate of bilateral trust is not confounded by structural differences in the nature and risk of credit use cases. The omitted base category is *General Corporate Use* and all remaining purpose coefficients reflect deviations from this benchmark. *Distressed/Restructuring* loans are associated with significantly longer maturities ($\beta = 0.19$ years, $p < 0.01$). This underscores that lenders are willing to extend maturities to facilitate recovery and avoid default when firms are undergoing restructuring (Ivashina and Scharfstein, 2010). *IPO/Equity-Linked* loans ($\beta = 0.29$ years, $p < 0.01$) also exhibit longer maturities relative to *General Corporate Use*. This may reflect supporting the expenses related to IPOs through bridge financing. Perhaps too, greater commercial awareness because of a public offering may result in longer average maturities. *LBO/Sponsor-Backed* display a substantially larger effect ($\beta = 2.20$ years, $p < 0.01$). LBOs are often financed via syndication and term loan maturities of LBOs are generally aligned to the projected cash flows (Dennis and Mullineaux, 2000; Demiroglu and James, 2010). *M&A* loans are associated with modestly shorter maturities ($\beta = -0.07$ years, $p < 0.01$). This may reflect bridge loans in M&A ahead of permanent capital issuance during an acquisition; however, there is no direct evidence as to why average maturities are shorter than general purpose loans. *Project/Asset Finance* exhibits the most economically substantial effect in the model, with an average maturity extension of over six years relative to general purpose loans ($\beta = 6.11$ years, $p < 0.01$). This is consistent with the characteristics of project and asset finance, requiring significant upfront investment and long-term cashflows to facilitate repayment over the long economic life of the project or asset. Similarly, *Trade/Short-Term Liquidity* has significantly shorter maturities ($\beta = -1.66$ years, $p < 0.01$), consistent with their intended use for working capital management and other liquidity smoothing functions.

The high between R-squared (0.7273) indicates that bilateral trust and loan purpose explain much of the cross-country variation in maturities, while the overall R-squared (0.2667) suggests a reasonable fit for a panel regression. Overall, the significance of our baseline model strongly supports **Hypothesis 1**.

6.1.2 Macro and Relational Model

Column (2) of Table 6, present the results for our macro-controls model, extending the baseline specification to include borrower and lender macroeconomic variables along with relational controls. The *Bilateral Trust* coefficient remains positive and highly significant ($\beta = 0.1554$ years, $p < 0.01$), minimally smaller than in the baseline model, an increase of approximately 7.5 weeks in maturity. This confirms that the effect of bilateral trust on maturity persists and confirms **H1** after accounting for macroeconomic and relational factors, underscoring the robustness of our model in explaining the variation in maturity.

Our macroeconomic controls performed largely in line with our expectations with the exception of *Borrower GDP Growth*, which was negative and marginally significant ($\beta = -0.55$ years, $p = 0.0646$). This is surprising, however, it likely reflects that borrowers in high-growth economies may favour shorter-term financing due to more favourable financing conditions. Similarly, it may suggest weaker economies negotiate longer maturities post-crisis, likely due to decreased long-term rates to incentivise growth. *Borrower Inflation* is strongly negatively associated with maturity ($\beta = -0.11$ years, $p < 0.01$), supporting the view that inflation increases uncertainty around real returns incentivising shorter maturities (Fan, Titman and Twite, 2012). *Lender Credit to GDP* is statistically insignificant ($\beta = 0.00$ years, $p = 0.6830$), suggesting that variation in lender country credit supply does not influence maturity, akin to results found in Cerutti et al. (2015).

Borrower Country Spread is negative and significant ($\beta = -0.15$ years, $p < 0.01$), indicating that syndicated loan maturities contract in countries with higher sovereign risk. This result aligns with the preference of lenders to manage exposure to macroeconomic or political instability by shortening maturities, allowing them to more frequently reassess and more appropriately price risk in volatile sovereign environments. *Borrower Yield Curve Steepness* is also negative ($\beta = -0.15$ years, $p < 0.01$), indicating that a steeper yield curve leads to a shorter maturity. Intuitively, when yield curves are steep borrowers are incentivised to borrow at shorter horizons as long-term borrowing becomes more expensive relative to the short-term. While a steep yield curve is often an indicator of future economic growth and higher interest rates, an interpretation is that lenders may shorten maturities due to lenders anticipating rising short-term rates to mitigate interest rate risk (Guedes and Opler, 1996; Barclay and Smith, 1995).

Our lender-borrower relationship controls provide some interesting results. *Lead Arrangers* in the syndicated market tend to hold shorter maturities ($\beta = -0.08$ years, $p < 0.01$). This follows with their role as facilitator to the larger syndicate, managing their own exposure through shorter maturities. Sufi (2007) and Ivashina (2009) demonstrate that arrangers often tailor contract terms to mitigate information asymmetry and facilitate marketability, especially under uncertain conditions. The *Precedence Dummy* is negative and highly significant ($\beta = -0.34$ years, $p < 0.01$), indicating that loans involving prior bilateral exposure between

lenders and borrowers tend to have shorter maturities. While this may seem to contradict the idea that trust built through relationship lending enables maturities to be extended, it could reflect that relationship strength manifests as shorter-term credit facilities which are periodically renewed.

6.1.3 Full Model

Column (3) of Table 6 reports the full model, adding *WGI Value* to control for the quality of a country's institutions and differences in legal enforcement. *Bilateral Trust's* coefficient remains virtually unchanged from the macro model, remaining positive and significant ($\beta = 0.156$ years, $p < 0.01$), again confirming **H1**. This implies that trust operates independently of governance to facilitate longer maturities.

WGI Value is insignificant ($\beta = 0.0512$ years, $p = 0.31$) and is likely the result of limited variation in institutional quality in our sample focused on the EU. Lastly, controls added in previous specifications remain virtually unchanged.

6.1.4 Robustness: Diagnostic Tests and Model Evaluation

Several diagnostic tests were performed to assess the quality of the core regressions specifications to inform our preliminary discussion and assess the robustness of the results.

The Breusch-Pagan test for heteroscedasticity revealed a highly significant result (LM statistic: 36564.3416, $p = 0.0$), indicating the presence of heteroscedasticity. This suggests that the variance of the residuals is not constant across observations. We addressed this early on in our empirical work to mitigate this issue and therefore use robust standard errors in all specifications to help ensure the efficiency of the coefficient estimates despite heteroscedasticity.

The Durbin-Watson statistic (1.59) suggests some degree of autocorrelation in the residuals. Autocorrelation implies that the error terms are correlated across time, which is common in panel data settings. Although not ideal, the use of robust standard errors should address some of the biases caused by autocorrelation, ensuring that the estimates are still valid for inference.

The Variance Inflation Factor (VIF) analysis was performed to check for multicollinearity. Lender Credit to GDP is the only alarming variable with a $VIF = 12.58$. This suggests that Lender Credit to GDP is collinear with another in our specification, which can inflate some standard errors. Formally, it indicates that some regressors may be capturing similar information.

In terms of model fit, the overall R^2 value of 0.2681 indicates that the model explains 26.81% of the variation in loan maturities.

The robustness of our full model regression is most compellingly demonstrated when assigning *Bilateral*

Trust scores to random countries over 1000 permutations. As an example of one such permutation, Spanish citizens' perceptions of Greek citizens are randomly assigned to another country-pair, e.g. German citizens' perceptions of Swedish citizens. This is done for every country in our dataset and the bilateral trust on maturity coefficient is calculated. When bilateral trust scores are randomly reassigned, the full model yields an average beta coefficient of zero, in stark contrast to the statistically significant $\beta = 0.1557$ years ($p < 0.001$) obtained in our full specification, regression (3). The distribution of coefficients from 1000 permutations is presented in **Figure 2** of our appendices, however, this is further evidence of the robustness of this studies estimates.

Overall, these diagnostic tests indicate that while the model provides valuable insights, there are some areas for improvement. The presence of multicollinearity for Lender Credit to GDP suggests that the model may need further refinement, however when taken out of the regression, coefficient estimates remained virtually unchanged with the exception of borrower inflation, which became significant only at the 10% level. Future studies should address multicollinearity through another proxy for the development of a lender countries financial system to improve the robustness of estimates, potentially a lender-specific metric such as number of bank branches in the borrower country.

6.1.5 Discussion of Core Regressions

Our finding that bilateral trust positively and significantly influences syndicated loan maturity is highly relevant given the European focus of our study. Considerable effort has been spent harmonising regulations under the EU's Capital Requirements Directive and Basel frameworks, however, our results dictate that bias continues to shape lending decisions.

Firstly, the bias caused by bilateral trust suggests that even within integrated European financial markets and a semi-uniform policy framework, lenders systematically lend to borrowers from countries they perceive as more trustworthy. This acts to perpetuate financial segmentation despite the EU's single market objective, leading to more favourable access to long-term funding for countries with historically higher levels of perceived trust.

Secondly, trust-biased lending decisions could exacerbate financial instability. During periods of heightened risk, countries perceived as relatively less trustworthy will experience sharper contractions in the availability of long-term finance, potentially reinforcing pro-cyclical credit cycles and impacting firms' financial flexibility and long-term investment decisions. For instance, firms in Southern European economies, some of which are still feeling the effects of the sovereign debt crisis, could face shorter maturities that exacerbate refinancing risks during stress episodes.

We must acknowledge key limitations. The Eurobarometer survey data used to construct the demeaned bilateral trust variable are time-invariant, capturing trust levels between country pairs without variation over the period in our study. A reasonable argument is that time-invariant bilateral trust data will not capture

fluctuations in trust, particularly during economic or political shocks like the Global Financial Crisis or Brexit. These events could feasibly alter trust dynamics either temporarily, or permanently, and a time-varying measure would offer greater precision, revealing nuanced changes in how trust influences lending decisions.

While this is undeniably true, we believe the time-invariant data is more than satisfactory for the following reasons. Firstly, this data is not available and perception based survey data cannot be captured retroactively. Secondly, we believe that bilateral trust itself is exogenous to loan maturity and the mere fact it persists over the 21 year time period means that reverse causality is unlikely to be a concern. Thirdly, Guiso, Sapienza and Zingales' (2009) paper shows that trust is sticky and persists over time - trust being determined primarily by shared religion, somatic similarity, fraction of years at war, and differences in GDP per capita. This means that trust is unlikely to vary dramatically as it is a culturally embedded attribute that evolves gradually. We also best control for the time-invariant nature of our data through our use of borrower country and year fixed-effects with time-varying macroeconomic controls. Granted, similarity in terms of economic development is a predictor of bilateral trust, however, these factors in tandem with the robustness of our bilateral trust parameter across our core regressions, robustness tests and the consequent interaction regressions more than compensate for the time-invariant nature of our data.

6.2 Interaction Tests

6.2.1 Heterogeneous Effects of Trust by Maturity Category

The results of our specifications which study the heterogeneous effects of trust by maturity category are presented in **Table 7**. These results allow us to assess the validity of our hypotheses regarding the heterogeneous effect of *Bilateral Trust* across loan horizons. **H2a** posits that the trust effect is more pronounced for long-term loans (over 120 months), where agency frictions and renegotiation risks are more pronounced. The strong and significant interaction term for *Long-Term* maturities (β = 1.4727, $p < 0.01$) strongly supports **H2a**. This echoes Diamond's (1991) logic - only borrowers perceived as credible and low-risk can access longer-dated financing - conditions that trust helps to overcome in opaque situations. **H2b**, by contrast, suggests that the effect of bilateral trust will be stronger for short-term loans (less than 24 months) relative to medium-term loans. Here, we fail to reject the null hypothesis - interaction coefficient for short-term maturities is marginally positive and insignificant (β = 0.0287, $p = 0.1955$), implying that here, bilateral trust has no influence.

These findings have significant implications in comparison to the core regressions, which mask considerable heterogeneity in the data. In the core regressions, a unit increase in *Bilateral Trust* in specifications (1)-(3) only increases maturity by approximately 6-8 weeks, in stark contrast to the approximately 18-month increase seen in *Bilateral Trust* $\times$ *Long-Term*. In essence, this demonstrates that the positive "bilateral trust effect" in the core regressions is driven exclusively by long-term loans. Long-term loans represent a lower proportion of the total loans within our sample meaning the effect was averaged across all loans when maturity category was not considered. These findings validate our empirical strategy and uncover additional information about

what drives the trust bias within EU syndicated lending. As we hypothesised in **H2**, long-term loans involve inherently more uncertainty, information asymmetry and difficulties in formal monitoring. Again, this aligns with the experimental evidence from Berger et al. (2005), who show that reducing information asymmetries results in longer-term maturities.

This regression has a very high between R-squared of 0.9450. This means our model explains 94.5% of the cross-country variation in maturities. Thus, the results lend strong credence to **H2a**, underscoring that trust is particularly influential when the contracting horizon and information asymmetry are greatest.

6.2.2 Heterogeneous Effects of Trust by Loan Purpose

The results of our specifications which study the heterogeneous effects of trust by maturity category are presented in **Table 8**. As a reminder, we interacted *Bilateral Trust* with purpose dummies that represent the three most complex loan purposes in our dataset, namely: *LBO/Sponsor-Backed* transactions, *Project/Asset Finance*, and *M&A*. This allows us to test for even more heterogeneity within our data and uncover more nuanced results about how bilateral trust impacts loan maturity. Here, the omitted baseline category is *General Corporate Use*, and therefore interaction coefficients are interpreted as the marginal effect of trust on loan maturity relative to *General Corporate Use* loans. Our results show that *Bilateral Trust* plays a significantly greater role in supporting loan maturity for loan purposes which exhibit higher information asymmetry as a result of complexity. These results confirm **Hypothesis 3**.

The interaction between *Bilateral Trust* and *LBO/Sponsor-Backed* loans is positive and statistically significant ($\beta = 0.2280$, $p < 0.01$). Interpreting the coefficient, a one-unit increase in *Bilateral Trust* is associated with an extension of approximately 0.23 years in maturity compared to *General Purpose Loans*. This supports **H3c**, which anticipated a modest but statistically significant effect of trust for LBOs. These deals are slightly more standardised and are influenced by strong sponsor-lender relationships while also involving considerable leverage and agency risk (Demiroglu and James, 2010), meaning bilateral trust plays a role in determining maturity.

As predicted in **H3a**, the effect is considerably more pronounced for *Project/Asset Finance* loans, where the trust interaction coefficient is large in magnitude and highly significant ($\beta = 1.0667$, $p < 0.01$). These loans are typically long-term, non-recourse, and structured around specific projects with considerable uncertainty in outcomes. As argued by Etsy (2004), project finance relies heavily on the credibility and relational capital of borrowers, especially in jurisdictions with limited contract enforceability. Although this is an independent test, given that many of the long-term loans in our sample are project finance loans, this outcome was already partially predetermined by our previous heterogeneity test (Trust $\times$ Maturity Category). Even then, it is interesting to see that the magnitude of the coefficient is smaller than that of the previous regression, further validating our empirical strategy in uncovering additional heterogeneity for bilateral trust under various purposes. Lastly, and perhaps the most important implication of this result is that access to funding for the development of long-term, often critical infrastructure is dependent on lenders' biased perceptions of how

trustworthy they consider citizens from other countries.

In examining *M&A* lending, *Bilateral Trust* once again proves crucial. The interaction coefficient of $\beta = 0.8309$ ($p < 0.01$) likely underscores how M&A transactions are often fast-paced, surrounded by uncertainty and fraught with informational asymmetry. According to Bharath et al. (2011), soft information (in this case bilateral trust) and repeated relationships mitigate these risks. Our results support **H3b**, which posited that trust would play a strong role in extending maturity for the M&A purpose cluster.

In summary, we find that *Bilateral Trust* has a context-dependent value in debt contracting. The fact that transaction- and project-based lending contributes the bulk of the positive coefficient as opposed to loans which facilitate everyday corporate operations provides convincing evidence that it is information asymmetry which drives the bilateral trust effect. This is further evinced by the negative coefficient of *Demeaned Trust* in comparison to the core regressions.

6.2.3 Borrower Size

The results of our specifications which study the heterogeneous effects of bilateral trust by borrower size are presented in **Table 9**. As a reminder, here we test for heterogeneity in the effect of *Bilateral Trust* to assess whether the size of the borrower, proxied in our sample by the size of the loan, has an impact on loan maturity. This is achieved by interacting *Bilateral Trust* with a dummy for *Small Borrower*, those below the 80th percentile of deal size, with *Large Borrower and Medium Borrower*s, those who represent the top 80% in our sample, serving as the baseline group. Our results indicate that *Bilateral Trust* is valuable as a *Small Borrower*, demonstrating a positive and weakly significant ($\beta = 0.1101$, $p < 0.10$). This suggests that bilateral trust has a moderate influence on extending maturities for smaller firms. This finding weakly supports **H4**, which hypothesised that trust would play a stronger role for smaller borrowers, who typically face greater information asymmetry (Berger et al., 2005) and limited collateral, increasing bilateral trust's influence. The fact that our dummy itself is an imperfect proxy for the size of the borrower may reflect the modest coefficient of the interaction. Considering our previous results for the heterogeneity of bilateral trust in borrower purposes with only the most strategically complex purposes exhibiting effects for bilateral trust these are unlikely to be reflected in the smallest face value loans which were used to construct the binary variable *Small Borrower*.

Conversely, larger and medium borrowers, who exhibit greater financial and reputational transparency are not impacted by *Bilateral Trust* ($\beta = 0.0158$, $p = 0.59$). Again, this lends further credence to both our empirical strategy and belief that informational asymmetry drives the impact of bilateral trust on maturity. Moreover, it aligns with **H4**, which posited that differences in the accessibility of hard information about the firm and thus the information asymmetry experienced by lenders would mean that the trust effect is more pronounced for small borrowers.

Perhaps most interestingly, by nature of being a *Small Borrower* you are granted longer maturities, the

dummy displays a strongly significant result ($\beta = 0.4187$, p < 0.01). This is likely to reflect a selection effect amongst small borrowers - only the most credible or well-connected small firms are able to access long-dated financing in the first place.

At the same time, the shorter maturities observed among large and medium size borrowers may not reflect lender conservatism but rather borrower preferences. Larger firms typically have more sophisticated treasury functions and may have access to capital markets. In addition, larger firms are more likely to strategically choose to borrow short and regularly refinance, retaining flexibility through active management of their liability structures.

6.2.4 Shock Events (GFC, European Sovereign Crises, Brexit)

The results of our specifications which evaluate how shock events affect the "bilateral trust effect" on maturity are presented in **Table 10**. As a reminder, we test how *Bilateral Trust* is impacted by macroeconomic disruption likely heightening uncertainty and impacting its salience. Formally, we utilise dummy interactions to examine the 2008 Global Financial Crisis (GFC), the 2010-2012 Southern European sovereign debt crisis, and the post-2016 Brexit fallout. Each model includes both the base bilateral trust term and the crisis-specific interaction to isolate how the marginal impact of trust varies under such conditions.

During the period following the GFC, the interaction between *Bilateral Trust* and the *post-2008* indicator is positive and statistically significant ($\beta = 0.3054$, $p < 0.01$). This indicates that bilateral trust played a larger role in extending loan maturities amid the financial shock. During this period, lenders were faced with heightened uncertainty over counterparties and therefore, soft information became increasingly relevant in mitigating opportunistic behaviour. This finding rejects the null hypothesis in support of **H5a**, which hypothesised that bilateral trust would play a more important role in the wake of the 2008 crisis.

In stark contrast, the interaction term during the Sovereign Debt Crisis is negative and statistically insignificant ($\beta = -0.2659$, $p = 0.362$), indicating no clear change in how trust influenced loan maturities in Southern Europe during the crisis years. This result fails to reject the null hypothesis, failing to support **H5b**, which predicted an increased reliance on trust amid elevated institutional uncertainty. An interpretation is that while the Global Financial Crisis unilaterally affected countries while country-specific shocks like the Sovereign Debt Crisis affect countries bilateral trust scores and is not captured by year fixed-effects. This highlights the shortcoming of the time-invariant Eurobarometer survey. It is possible that trust may have rapidly declined during the crisis for a few countries only, not unilaterally, and reverted to mean scores post-crisis.

Finally, the interaction between *Bilateral Trust* and the *post-2016 Brexit* dummy is negative and highly significant ($\beta = -0.6337$, $p < 0.01$), indicating that trust became substantially less influential in determining loan maturity for UK-related deals after 2016. Again, we fail to reject the null hypothesis for **H5c**, which hypothesised a heightened role for trust following the political and regulatory uncertainty triggered by Brexit. Instead, the evidence suggests that institutional unpredictability may have weakened the usefulness of soft information in lender decision-making. In this context, it is probable that lenders retrenched towards hard

information such as legal enforceability or regulatory exposure. Moreover, it is likely that Brexit permanently impacted Europeans' perceptions of the UK's trustworthiness alone and the time-invariant nature of our bilateral trust variable does not adjust for this.

Taken together, these results suggest that while trust can become more salient under financial stress, as shown during the GFC, its role is not uniformly amplified across all crises. The salience of trust appears to depend on the nature of the shock and how systemic the shock proved to be across Europe.

7 Conclusion

In this study, we demonstrate that bilateral trust positively and significantly influences loan maturity. As revealed in our interaction tests, the "bilateral trust effect" is heterogeneous. Specifically, the "bilateral trust effect" is only prominent in long-term loans (>120 months), the lowest frequency maturity category in our dataset. This test reveals that unit increase in *Bilateral Trust* increases long-term loan maturity by approximately 18 months. In contrast, our core regression results, which do not include maturity category interactions, find that maturity is extended at most by 8 weeks per unit increase in bilateral trust. Considering that bilateral trust is only significant for long-term loans, it is evident that our core regression estimations are negatively biased as the "bilateral trust effect" is distributed unevenly amongst short-, medium-, and long-term loans.

Our purpose cluster interaction test revealed that the "bilateral trust effect" is considerably more prominent in the M&A, Project/Asset Finance, and LBO loan clusters. We contend that this phenomenon arises because these clusters are transaction-based, marked by considerable complexity, pronounced information asymmetry, and contractual incompleteness at the stage of loan term sheet agreement. All these results give credence to our general hypothesis, that bilateral trust is a mediating force which compensates for information asymmetry between contracting parties, giving lenders the confidence to extend longer maturities.

The borrower size interaction specifications use loan amount as an imperfect proxy for borrower size, this was due to data limitations. The results of this interaction specification reveal that the "bilateral trust effect" was stronger for small borrowers than for large- and medium-sized borrowers, as hypothesised. This likely reflects the increased visibility, reputation and ease of informational accessibility of large and medium borrowers, in stark contrast to smaller borrowers. While we rejected the null hypothesis for this test, we believe the imperfect proxy for borrower size may be negatively biasing the coefficient and its associated statistical significance. We believe future research which further examines bilateral trust on loan maturity should include more detailed borrower specific information, for instance, financial statements a bank would assess while evaluating borrower risk. While we control for it as best we can using macroeconomic data, this is one of the main limitations of our model. Borrower specific information will more accurately ascertain unbiased coefficients for this interaction and the true effect of bilateral trust across all specifications.

Consequently, we can say with confidence that lenders' perceptions of borrowers' countries systematically

bias the loan maturity of cross-border syndicated loans. This "bilateral trust effect" is present before and after the inclusion of borrower- and lender-side controls. The purpose of the loan is controlled for throughout, taking the form of dummy variables which are grouped by loan purpose clusters (see Table 14) to reduce multicollinearity. These regression results were achieved through use of a fixed-effects panel regressions, the fixed-effects were used throughout and are specifically borrower-country fixed-effects and year fixed-effects.

As mentioned previously, we believe it is important to acknowledge that the trust scores obtained from Eurobarometer are time-invariant. We assert that this explains the partially inconclusive effects of bilateral trust for the shock event specifications. Specifically, only the post-Global Financial Crisis specification had the sign and significance we hypothesised, whereas post-Brexit and post-Southern European Debt Crisis specification results were contrary to our expectations. In contrast to the "Global" Financial Crisis, which affected all countries and was captured by year fixed-effects, crises with more country-specific affects likely skewed our results. Indeed, re-estimating these specifications with time-variant bilateral trust data would be ideal, however, we are confident this does not impact the effect of bilateral trust in our other specifications for the following reasons. Firstly, Guiso et al. (2009), instruments for trust and finds it is persistent over time. Secondly, the Eurobarometer survey data provides a robust defence against reverse causality - lender decisions over loan maturity are unlikely to manifest in Eurobarometer surveys where citizens from "Country A" are asked whether they would trust citizens from "Country B". Finally, our use of year fixed-effects act to control for the time invariant nature of our data in non-country specific specifications.

Practically, our results suggest that bilateral trust is not only a social construct but an economic input with measurable consequences for both credit markets and the EU's international competitiveness. In the same vein, the bilateral trust bias reinforces the existing economic disparities among European countries' GDPs. Ironically, the countries with the highest GDPs also possess the most developed financial centres, thereby limiting the growth potential of countries they perceive as untrustworthy. This is a real problem when you consider that the "bilateral trust effect" is concentrated in long-term loans, those crucial for the development of productivity-enhancing infrastructure. Additionally, lenders' decisions on loan maturity cannot be disentangled from the borrower's country, since the country itself provides essential "hard information" that shapes lenders' perceptions of borrower risk. This is why we believe that developing specific trust enhancing infrastructure is difficult. In light of this, we argue that it is incumbent upon the local government, irrespective of how trustworthy they are perceived to be, to intervene and address this long-term credit gap. This take the form of direct investments in infrastructure from the governments' own balance sheets, or investments similar to public-private partnerships common in project finance. We arrive at this conclusion as infrastructure investments have been demonstrated to have long-term impacts on productivity, GDP growth rates, and consequently future economic prosperity.

8 List of References

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9 Appendices

Table 1: Data Sources and Constructed Variables

Dimension	Description	Source
Loan-level data	Borrower/lender identity, nationality, loan maturity (years), loan amount (USD), primary purpose, collateral indicator, syndicate size, precedence, deal year	Refinitiv LPC DealScan
GDP growth	Annual real GDP growth rate at borrower/lender country level	World Bank WDI
Inflation (CPI)	Annual consumer price index (CPI) inflation	World Bank WDI
Private credit to GDP	Ratio of private credit to GDP, a proxy for financial development	World Bank GFDD
Bilateral trust	Average trust of citizens in country *i* toward citizens of country *j*, by year	Eurobarometer Surveys; Guiso, Sapienza and Zingales (2009)
Political stability / Rule of law	Institutional governance quality indicators	World Bank WGI
Creditor rights enforcement	Efficiency of judicial repossession, case resolution	Djankov et al. (2008)
Sovereign spread	10Y yield (borrower) minus 10Y German Bund yield	Refinitiv sovereign bond data
Yield curve steepness	10Y - 2Y yield differential for borrower and lender countries	Refinitiv sovereign bond data

Table 2: Illustration of Raw and Row-Centered Trust Scores

Country i (Origin)	Trust in Germany (j)	Average Trust (All $j \neq i$)
Sweden	3.13	3.12
Portugal	2.54	2.68

Table 3: Variable Definitions and Summary Statistics

Variable	Description	Time Series	Level
Maturity (Years)	Loan maturity in years	Y	Loan
Demeaned Bilateral Trust	Bilateral trust score (Eurobarometer)	N	Country-Pair
Borrower GDP Growth	GDP growth of borrower country	Y	Borrower
Lender Credit to GDP	Lender country financing capability	Y	Lender
Borrower Inflation	Borrower country annual inflation rate	Y	Borrower
WGI Value	Political stability index (World Bank)	Y	Borrower
Purpose Cluster	Categorical loan purpose grouping	Y	Loan
Maturity Category	Short, medium, and long term categoricals	Y	Loan
Borrower Size	Size: small, mid, and large categoricals	Y	Loan
Primary Role Dummy	1 if the loan is from the syndicate arranger - 0 otherwise	Y	Loan
Precedence Dummy	1 if the lender/borrower institutions pair have previously interacted - 0 otherwise	Y	Loan

Table 4: Interaction Dummies Used to Test Heterogeneous Effects of Trust

Regression #	Interaction $\times$ Bilateral Trust	Reference Category
(4)	Trust $\times$ Short-Term Dummy ($\leq$ 24 months)	Medium-Term Loans
(4)	Trust $\times$ Long-Term Dummy (>120 months)	Medium-Term Loans
(5)	Trust $\times$ Project/Asset Finance Dummy	General Corporate Use Loans
(5)	Trust $\times$ LBO Loan Dummy	General Corporate Use Loans
(5)	Trust $\times$ M&A Loan Dummy	General Corporate Use Loans
(6)	Trust $\times$ Small Borrower Dummy ($\leq$ 80th percentile)	Large and Medium Size Borrowers

Table 5: Interaction Regressions with Macroeconomic and Political Shocks

Regression #	Interaction $\times$ Bilateral Trust	Shock Environment Captured
(7)	Bilateral Trust $\times$ Post-2008 Dummy	Global Financial Crisis aftermath (loans issued from 2009 onward)
(8)	Bilateral Trust $\times$ Sovereign Crisis Dummy	Southern European sovereign debt crisis (loans to IT, ES, PT, GR between 2010-2012)
(9)	Bilateral Trust $\times$ Brexit Dummy	UK-specific uncertainty (loans from 2016 onward involving UK borrower or lead lender)

Table 6: Core Regressions Estimates: Dependent Variable = Loan Maturity (Years)

This table presents the results of our core fixed-effects (borrower country fixed-effects and year fixed-effects) panel regressions estimating the effect of *Bilateral Trust* on syndicated loan maturity (in years). Column (1) reports the baseline specification, regressing loan maturity (in years) on the Demeaned *Bilateral Trust* score with loan purpose dummies. Columns (2) and (3) report the macro controls and full specifications, respectively, which sequentially add borrower- and lender-side macroeconomic variables (*Borrower GDP Growth*, *Borrower Inflation*, *Lender Credit to GDP*, *Primary Role Dummy*, *Precedence Dummy*, *Borrower Country Sovereign Spread*, *Borrower Country Sovereign Steepness*) and institutional controls (World Bank Governance Indicator, *"WGI Value"*). The sample comprises 180,179 observations, reduced from 223,257 due to missing data for macroeconomic and institutional variables and the application of inclusion criteria (e.g., loans from 2002–2022 across 13 EU countries and the UK with complete trust and control data). All regressions use robust standard errors to address heteroscedasticity and are reported below the parameter estimates in parentheses. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Baseline	**Macro Controls**	**Full Model**
	(1)	(2)	(3)
Constant (General Corporate Use)	4.5326***	5.2976***	5.2747***
	(0.0112)	(0.0581)	(0.0630)
Bilateral Trust	0.1734***	0.1554***	0.1557***
	(0.0289)	(0.0287)	(0.0287)
Borrower GDP Growth		-0.5545*	-0.5555*
		(0.2984)	(0.2984)
Borrower Inflation		-0.1054***	-0.1022***
		(0.0139)	(0.0142)
Lender Credit to GDP		0.0001	0.0002
		(0.0003)	(0.0003)
Borrower Country Sovereign Spread		-0.1531***	-0.1517***
		(0.0203)	(0.0204)
Borrower Country Sovereign Steepness		-0.1538***	-0.1648***
		(0.0301)	(0.0313)
Primary Role Dummy		-0.0763***	-0.0765***
		(0.0156)	(0.0156)
Precedence Dummy		-0.3359***	-0.3361***
		(0.0187)	(0.0187)
WGI Value			0.0492
			(0.0501)
Purpose: Distressed / Restructuring	0.1947***	0.2832***	0.2838***
	(0.0702)	(0.0702)	(0.0702)
Purpose: IPO / Equity-Linked	0.2894***	0.2838***	0.2851***
	(0.0393)	(0.0406)	(0.0406)
Purpose: LBO / Sponsor-Backed	2.2008***	2.2216***	2.2213***
	(0.0147)	(0.0149)	(0.0149)
Purpose: M&A	-0.0697***	-0.0804***	-0.0794***
	(0.0192)	(0.0192)	(0.0192)
Purpose: Project / Asset Finance	6.1096***	6.0504***	6.0516***
	(0.0535)	(0.0537)	(0.0536)
Purpose: Trade / Short-Term Liquidity	-1.6607***	-1.6752***	-1.6740***
	(0.0599)	(0.0604)	(0.0604)
Observations	180,070	180,070	180,070
Between R^2	0.7273	0.6799	0.6789
R^2 (Overall)	0.2667	0.2683	0.2681

Table 7: Effects of Trust by Maturity Category: Dependent Variable = Loan Maturity (Years)

We present the results of our fixed-effects (borrower country fixed-effects and year fixed-effects) panel regression including interaction terms for different maturity categories estimating the effect of *Bilateral Trust* on syndicated loan maturity (in years). This regression uses all controls as in the Full Model (3) but parameter estimates for controls are not presented for simplicity. The regression uses robust standard errors to address heteroscedasticity and are reported below the parameter estimates in parentheses. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Trust × Maturity Category
	(4)
Constant	5.2554***
	(0.0345)
Bilateral Trust	-0.0114
	(0.0148)
Maturity (Short-Term)	-3.9970***
	(0.0099)
Maturity (Long-Term)	11.5030***
	(0.0647)
Trust × Short-Term	0.0287
	(0.0222)
Trust × Long-Term	1.4727***
	(0.1955)
Observations	180,070
Between R^2	0.9450
R^2 (Overall)	0.7705

Table 8: Effects of Trust by Purpose: Dependent Variable = Loan Maturity (Years)

We present the results of our fixed-effects (borrower country fixed-effects and year fixed-effects) panel regression including interaction terms for different loan purposes estimating the effect of *Bilateral Trust* on syndicated loan maturity (in years). This regression uses all controls as in the Full Model but parameter estimates for controls are not presented for simplicity. The regression uses robust standard errors to address heteroscedasticity and are reported below the parameter estimates in parentheses. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Trust × Purpose Category
	(5)
Constant	5.2910***
	(0.0624)
Bilateral Trust	-0.0762***
	(0.0270)
Purpose: LBO / Sponsor-Backed	2.1855***
	(0.0202)
Purpose: Project / Asset Finance	5.8236***
	(0.0659)
Purpose: M&A	-0.3149***
	(0.0274)
Trust × LBO / Sponsor-Backed	0.2280***
	(0.0418)
Trust × Project / Asset Finance	1.0667***
	(0.1945)
Trust × M&A	0.8309***
	(0.0591)
Observations	180,070
Between R^2	0.6667
R^2 (Overall)	0.2675

Table 9: Effects of Trust by Borrower Size: Dependent Variable = Loan Maturity (Years)

We present the results of our fixed-effects (borrower country fixed-effects and year fixed-effects) panel regression including interaction terms for small borrowers estimating the effect of *Bilateral Trust* on syndicated loan maturity (in years). This regression uses all controls as in the Full Model but parameter estimates for controls are not presented for simplicity. The regression uses robust standard errors to address heteroscedasticity and are reported below the parameter estimates in parentheses. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Trust × Small Borrower
	(6)
Constant	5.0654***
	(0.0633)
Bilateral Trust	0.0158
	(0.0291)
Small Borrower	0.4187***
	(0.0303)
Trust × Small Borrower	0.1101*
	(0.0619)
Observations	180,070
Between R^2	0.6797
R^2 (Overall)	0.2715

Table 10: Trust Interactions with Shock Events: Dependent Variable = Loan Maturity (Years)

We present the results of our fixed-effects (borrower country fixed-effects and year fixed-effects) panel regressions estimating the effect of *Bilateral Trust* on syndicated loan maturity (in years) with interaction terms for crisis periods and Brexit. Specifications (7)–(9) report trust interactions for the Post-2008 Crisis, Sovereign Crisis, and Post-2016 Brexit period, respectively. This regression uses all controls as in the Full Model (3) but parameter estimates for controls are not presented for simplicity. All regressions use robust standard errors to address heteroscedasticity and are reported below the parameter estimates in parentheses. *, **, *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Post-2008 Crisis	**Sovereign Crisis**	**Post-2016 Brexit**
	(7)	(8)	(9)
Constant	5.2994***	5.2743***	5.2190***
	(0.0632)	(0.0630)	(0.0634)
Bilateral Trust	-0.0394	0.1617***	0.2263***
	(0.0439)	(0.0287)	(0.0297)
Trust × Post-2008 Crisis	0.3054***		
	(0.0534)		
Trust × Sovereign Crisis		-0.2659	
		(0.2531)	
Trust × Post-2016 Brexit			-0.6337***
			(0.0652)
Observations	180,070	180,070	180,070
Between R^2	0.6856	0.6782	0.6784
R^2 (Overall)	0.2670	0.2681	0.2688

Table 11: Eurobarometer Survey Data: Bilateral Trust Scores

Each cell reports the average level of trust expressed by citizens of the origin country (rows) toward citizens of the destination country (columns), based on Eurobarometer survey data. Respondents were asked: "I would like to ask you a question about how much trust you have in people from various countries. For each, please tell me whether you have a lot of trust, some trust, not very much trust, or no trust at all." The responses were assigned the following scores: 4 = a lot of trust, 3 = some trust, 2 = not very much trust and 1 = no trust at all. Respondents' scores for the trustworthiness of their own countries are highlighted in bold.

Countries of Origin	**AUS**	**BEL**	**UK**	**DEN**	**NLD**	**FIN**	**FRA**	**GER**	**GRE**	**IRE**	**ITA**	**POR**	**SPA**	**SWE**	**Avg.**
Austria	**3.56**	2.95	2.61	2.95	2.95	2.94	2.62	3.09	2.52	2.55	2.43	3.00	2.50	2.58	2.82
Belgium	2.83	**3.28**	2.84	3.01	2.90	2.92	2.92	2.75	2.45	2.75	2.40	2.91	2.53	2.59	2.80
UK	2.89	2.91	**3.29**	3.13	3.16	2.98	2.32	2.62	2.54	2.61	2.51	3.06	2.74	2.47	2.82
Denmark	3.22	3.18	3.22	**3.39**	3.33	3.20	2.86	3.12	2.61	3.02	2.53	3.50	2.67	2.66	3.06
Netherlands	2.90	3.18	3.00	3.29	**3.28**	3.25	2.72	2.84	2.59	2.80	2.35	3.30	2.74	2.64	2.95
Finland	3.29	3.07	3.18	3.30	3.14	**3.69**	2.92	2.89	2.68	2.92	2.51	3.48	2.67	2.61	3.05
France	2.70	3.07	2.55	2.96	2.94	2.91	**3.18**	2.74	2.53	2.72	2.43	2.97	2.59	2.68	2.80
Germany	2.98	2.84	2.69	2.97	2.90	2.85	2.85	**3.50**	2.51	2.59	2.36	2.92	2.48	2.66	2.81
Greece	2.32	2.60	2.34	2.56	2.55	2.42	2.78	2.31	**3.21**	2.55	2.33	2.40	2.60	2.71	2.59
Ireland	2.93	2.93	2.81	2.99	3.00	2.92	2.81	2.78	2.50	**3.33**	2.65	2.93	2.65	2.64	2.85
Italy	2.66	2.64	2.51	2.70	2.77	2.78	2.66	2.63	2.40	2.37	**2.80**	2.78	2.32	2.64	2.64
Portugal	2.13	2.66	2.66	2.66	2.70	2.18	2.91	2.54	2.41	2.51	2.55	**2.22**	3.29	2.59	2.55
Spain	2.65	2.73	2.31	2.73	2.85	2.71	2.37	2.66	2.47	2.57	2.61	2.79	**2.51**	3.32	2.67
Sweden	3.53	3.23	3.43	3.57	3.33	3.49	3.04	3.13	2.88	3.26	2.81	3.65	2.97	**2.86**	3.25
Avg.	2.90	2.96	2.85	3.05	3.00	2.95	2.79	2.84	2.59	2.77	2.52	2.99	2.66	2.68	3.01

Table 12: Syndicated Loans per Country and Year

This table displays descriptive statistics on the relative distribution of syndicated loans by country and by arranger status. Note % Cross Border depicts the percentage of loans extended to countries other than their own and is an average of both arrangers and participants and is denoted in parentheses. The yearly observation represents the number of all loans extended in the EU that calendar year, not broken down by country.

Country of Origin	Arrangers		Participants		Breakdown	Frequency of Observations	
	No. of banks	No. of observations	No. of banks	No. of observations	% Cross Border	Year	Observations
Austria	30	1 874	28	1 480	75.7%	2002	8 136
Belgium	22	2 966	13	1 773	81.9%	2003	10 101
Denmark	18	1 778	17	801	79.2%	2004	11 976
Finland	15	553	11	181	16.1%	2005	15 670
France	88	24 188	102	28 221	46.2%	2006	14 104
Germany	206	19 498	303	20 581	46.9%	2007	14 603
Greece	15	295	15	235	26.0%	2008	9 759
Ireland	19	2 384	19	2 010	89.4%	2009	7 882
Italy	114	11 012	151	10 204	50.2%	2010	11 336
Netherlands	38	8 139	43	6 388	67.1%	2011	7 338
Portugal	15	1 186	10	631	73.4%	2012	6 397
Spain	162	19 920	172	13 048	22.6%	2013	7 306
Sweden	10	3 067	7	1 333	63.7%	2014	12 973
United Kingdom	103	20 938	97	18 570	49.6%	2015	12 802
						2016	10 957
						2017	11 736
						2018	12 214
						2019	10 395
						2020	9 643
						2021	9 423
						2022	8 483
Total (Average)	855	117 778	988	105 456	(56.3)%		223 234

Table 13: Syndicated Loans by Purpose Cluster and Borrower Country

This table reports the number of syndicated loans originated in each borrower country, disaggregated by purpose cluster. The columns represent the main use-of-proceeds categories defined in the study, with shortened labels for space. France, Germany, the United Kingdom, and Spain account for the largest volume of loans across nearly all categories. Some clusters, such as LBO and M&A, are heavily concentrated in financial hubs like France and the UK, while Project Finance and Trade-related lending appear more evenly distributed. The low number of distressed and IPO-related loans reflects their niche nature within the overall syndicated lending landscape.

Country	Distressed	Corp. Use	IPO	LBO	M&A	Project	Trade
Austria	0	2323	0	115	54	97	82
Belgium	16	3085	43	1165	502	504	8
Denmark	11	1736	53	421	269	107	21
Finland	13	2380	8	179	289	162	6
France	193	23288	206	11209	6110	3362	187
Germany	98	26457	213	5639	3684	1650	296
Greece	30	808	1	60	30	513	32
Ireland	14	2155	24	439	317	573	43
Italy	78	9238	29	3643	1961	2908	50
Netherlands	31	9734	93	3317	1382	1037	561
Portugal	6	643	0	82	175	760	0
Spain	708	24245	8	3874	3174	7187	170
Sweden	8	3311	40	904	420	413	104
United Kingdom	310	23737	302	8295	4494	3961	473

Table 14: Purpose Cluster Classification and Summary Statistics

This table presents the standardised classification of loan purposes used in the regression analysis, along with descriptive statistics for each cluster. The *Purpose Cluster* column groups individual primary loan purposes into economically meaningful categories. The *Original Primary Purposes* column lists the raw classifications from DealScan that are mapped into each cluster. The table also reports the number of observations (*Obs.*), the average loan maturity in years, the average deal size in millions of USD, and the average number of lenders participating in the syndicate. Notably, syndicated loans financing *Trade / Short-Term Liquidity* and *Distressed / Restructuring* transactions tend to involve more lenders on average, suggesting greater risk-sharing or higher information demands. In contrast, *Project / Asset Finance* loans, while long in maturity, exhibit smaller syndicates, likely reflecting their bespoke, asset-specific nature. The "Undisclosed / Other" category is excluded from the table to focus on analytically interpretable clusters.

Purpose Cluster	**Original Primary Purposes**	**Obs.**	**Avg. Maturity (Yrs)**	**Avg. Deal Size (USD M)**	**Avg. No. of Lenders**
General Corporate Use	General Purpose, General Purpose/Refinance, Working Capital, Capital Expenditure, Equipment Upgrade/Construction, Other	133,140	4.57	1,253.88	11.99
LBO / Sponsor-Backed	Leveraged Buyout, Sponsored Buyout, Management Buyout, Dividend Recapitalization, Recapitalization, Dividend or Distribution to Shareholders	39,342	6.94	923.33	10.36
Project / Asset Finance	Project Finance, Real Estate Loan, Aircraft & Ship Finance, Telecom Buildout, Lease Financing, Ship Finance	23,234	10.66	675.12	8.18
M&A	Acquisition, Takeover, Merger, Spinoff, Stock Repurchase, General Purpose/Stock Repurchase, Standby Takeover Defense	22,861	4.46	3,635.98	12.91
Trade / Short-Term Liquidity	Trade Finance, Commercial Paper Backup, Pre-Export, Receivables Program, Mortgage Warehousing, Guarantee	2,033	2.79	1,524.64	17.91
Distressed / Restructuring	Restructuring, Exit Financing, Debtor-in-Possession, Collateralized Debt Obligation (CDO), Credit Enhancement	1,516	4.70	2,094.38	16.77
IPO / Equity-Linked	IPO Related Financing	1,020	4.71	1,164.04	12.19

Figure 1: Maturity Distribution by Primary Purpose and Purpose Cluster

Boxplots showing the distribution of loan maturities by *Primary Purpose* (left) and by aggregated *Purpose Cluster* (right). The left panel displays a wide array of original deal-level purposes, revealing high heterogeneity in maturity distributions. The right panel simplifies the classification by grouping primary purposes into broader clusters. This highlights more clearly that *Project / Asset Finance* stands out as having significantly longer and more dispersed maturities than other clusters, consistent with the capital intensity and risk profile of these loans. Meanwhile, *Trade / Short-Term Liquidity*, *IPO / Equity-Linked*, and *Distressed / Restructuring* clusters show tighter maturity bands centered around shorter tenors. The visual comparison reinforces the validity of the clustering scheme, as it preserves key structural differences while reducing noise from granular, idiosyncratic labels.

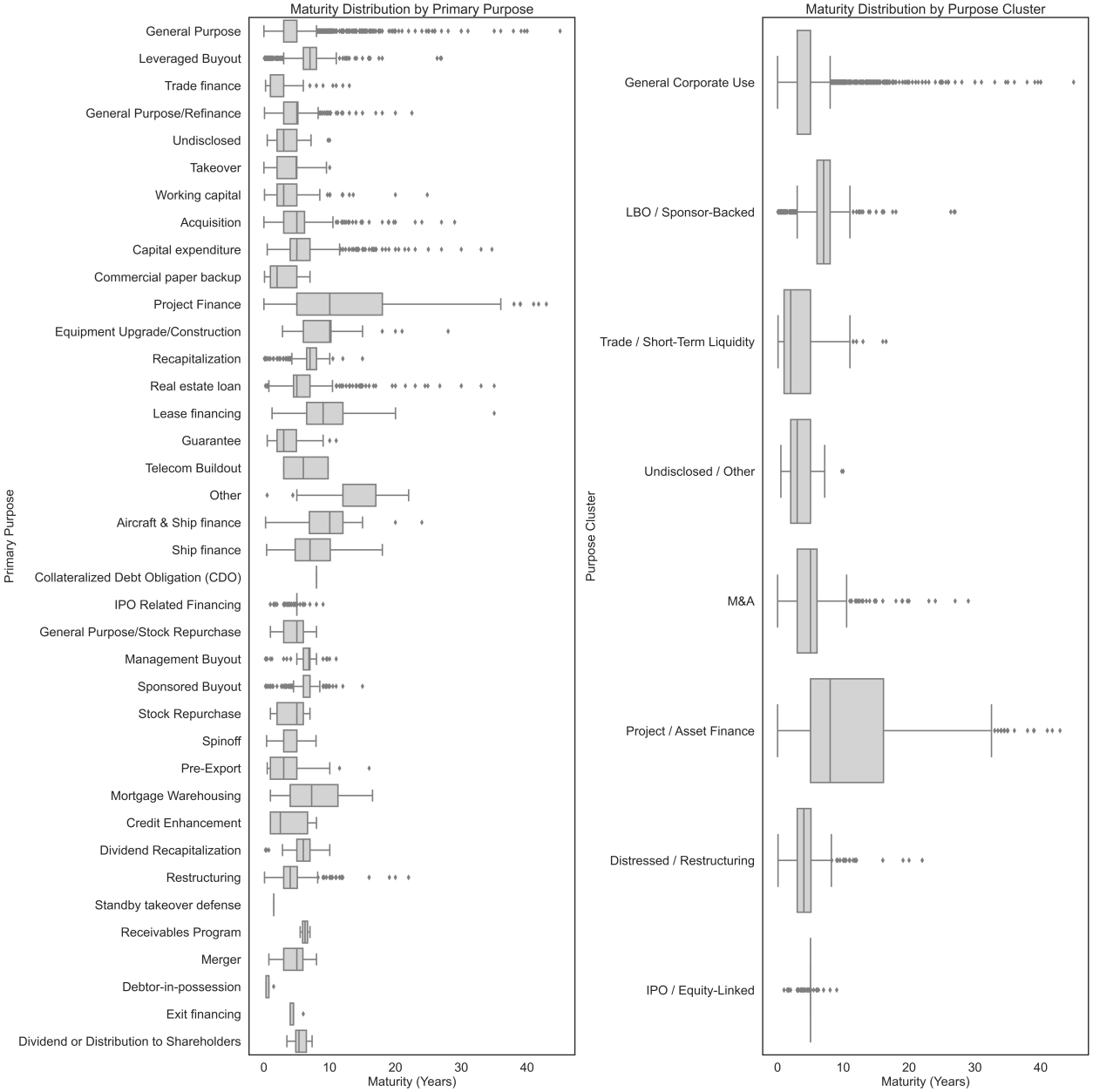

Figure 2: Permutation Test of the Trust Coefficient

The histogram shows the distribution of coefficients estimated after randomly permuting the *Demeaned Bilateral Trust* variable 1000 times. The red dashed line marks the true coefficient $\hat{\beta} = 0.1557$ obtained in the full specification model. The fact that the true estimate lies far in the upper tail of the permutation distribution suggests that the observed trust effect is highly unlikely to arise by chance, reinforcing its statistical significance.

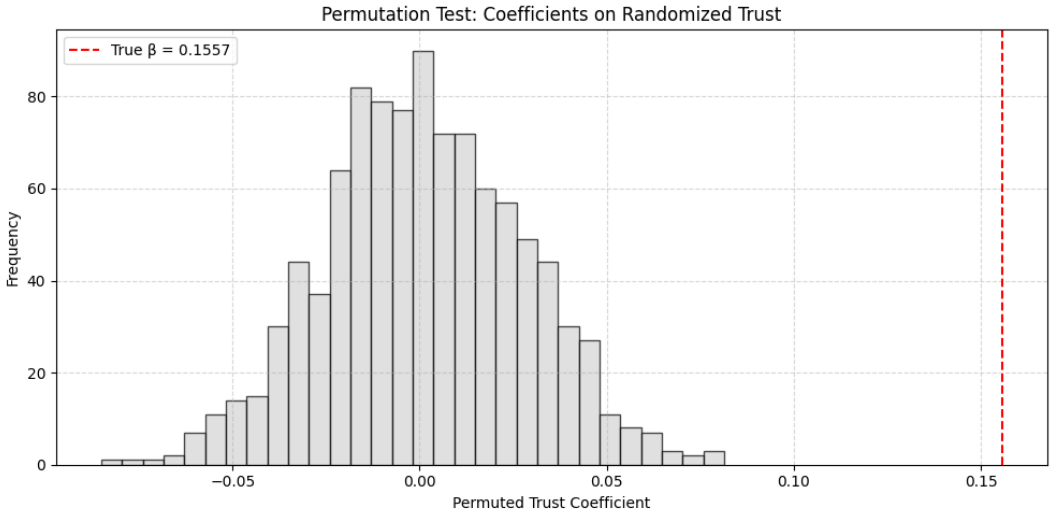

Figure 3: Variance Inflation Factors (VIF) for Explanatory Variables

Grey-filled bars show VIF values for each variable included in the regression, with dashed and dotted black lines marking moderate (VIF = 5) and severe (VIF = 10) multicollinearity thresholds, respectively. The figure shows that most variables fall well below critical thresholds, supporting the robustness of our regression results.